# CONCEPTUAL STUDY
# OF
# ARTICULATED STABLE OCEAN PLATFORM

## FINAL REPORT
## PART II
## (VOLUME III)

CONTRACT NO. N00167-95-C-0113
CDRL SEQUENCE NO. G005

PREPARED FOR

CARDEROCK DIVISION
NAVAL SURFACE WARFARE CENTER

DTIC QUALITY INSPECTED 4

Prepared by

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19. ABSTRACT *(Continue on reverse if necessary and identify by block number)*

A conceptual study has been completed to evaluate the feasibility of a new concept of a floating storage platform - the Articulated Stable Ocean Platform (ASOP). The unique aspects of the ASOP is the articulation of the stabilize buoys which were introduced for the purposes of reducing wave load and overall vessel motion. The ASOP was designed to have a fuel storage capability of 1 million barrels and to support a topside up to 12,000 kips in total weight. The fuel storage tanks were designed in such a way that the draft of the platform would remain unchanged at any loading condition without adjusting the ballast. This greatly simplified the operations and allowed the platform to continue other activities while loading and off-loading.

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The study shows that the ASOP has adequate stability and satisfies the stability requirement of the certifying authorities. Both numerical analysis and model test showed that the ASOP offers exceptional motion response characteristics in all its degrees of freedom. In terms of platform motion response, the ASOP is capable of operating in more severe weather conditions than a conventional surface vessel type platform. A seven body (six buoys and the hull) coupled motion analysis in ocean environment was performed and results in general agreed with the model test. However, both numerical analysis and model tests showed that the articulated buoys have no clear advantage over fixed buoys in the global motion of the ASOP. The reduction of forces by using articulation did not significantly improve the motion of the platform. Furthermore, the analysis and model test showed that compared to the fixed buoy case, using articulations increased the slow drift motions of the ASOP in random waves. The study also indicated that the introduction of articulations complicated the hydrostatic stability of the platform. Damaged stability was the governing factor in determination of the size of the articulated buoys. In conclusion, this conceptual study indicated that the fuel storage ASOP is a viable concept. Its large storage capability and exceptional motion characteristics allow many applications both in civil and military purpose.

Preliminary Report No. OMB-95-214-1

# MODEL STUDIES OF ARTICULATED STABLE OCEAN PLATFORM

## VOLUME III

**JUNE 1996**

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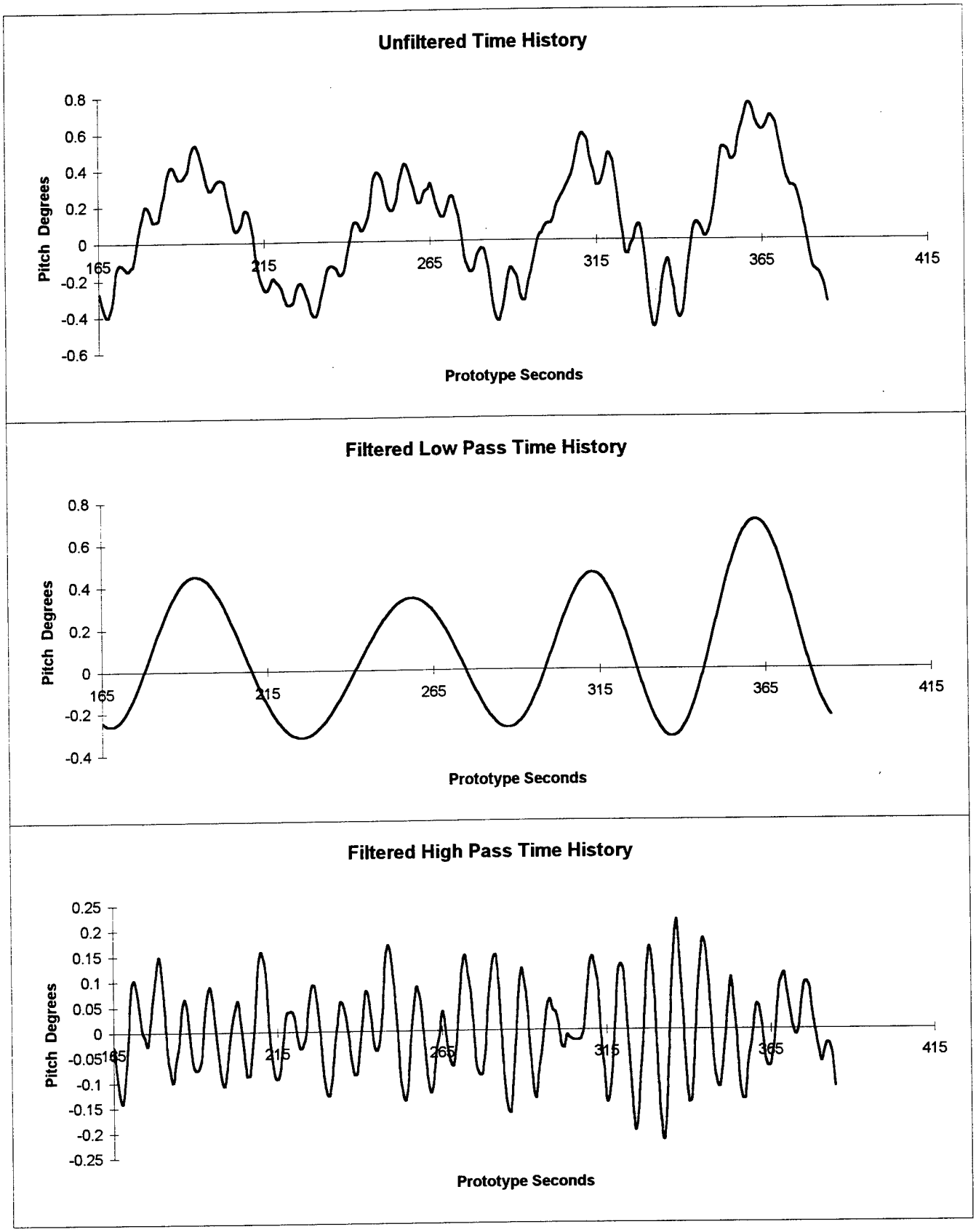
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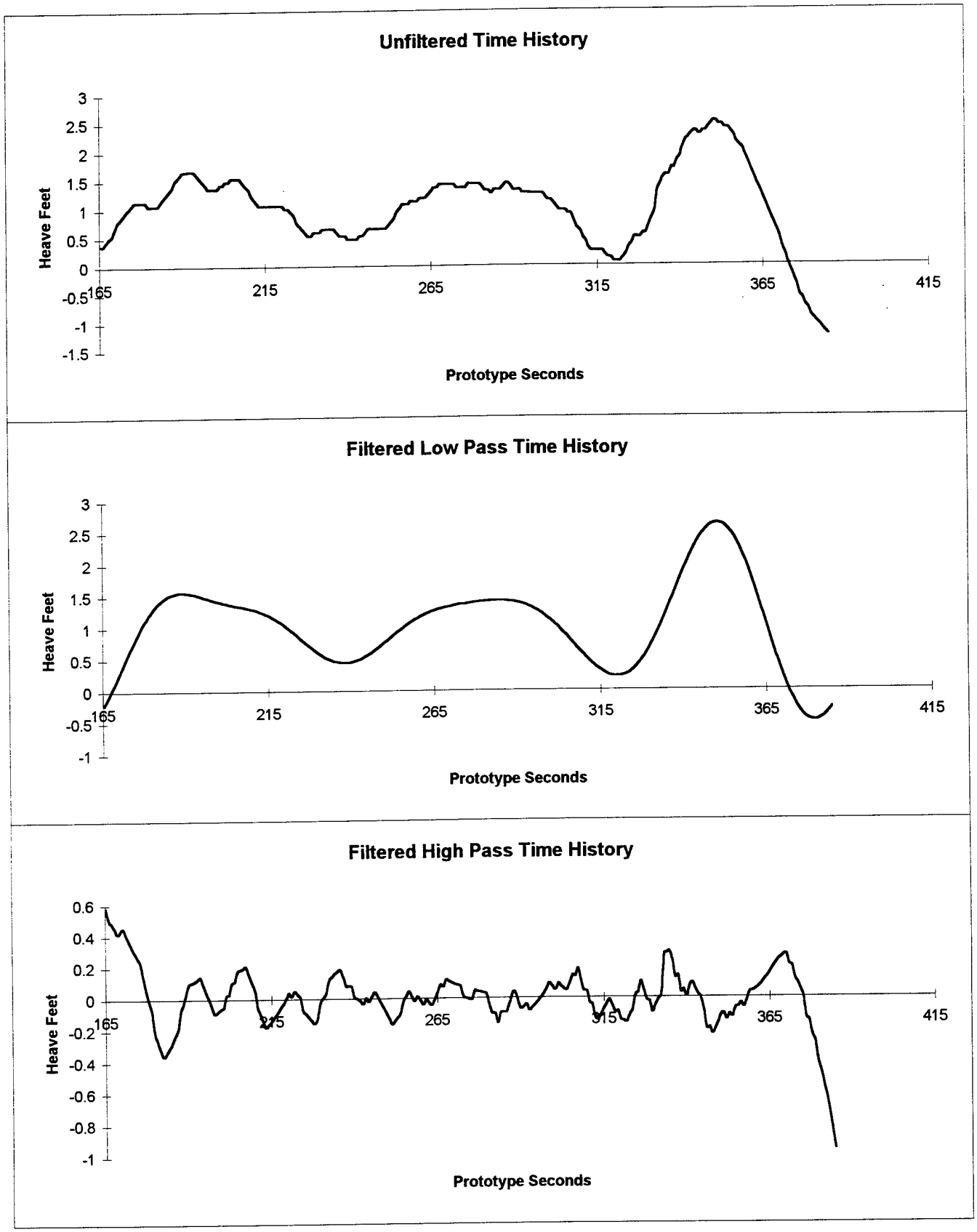
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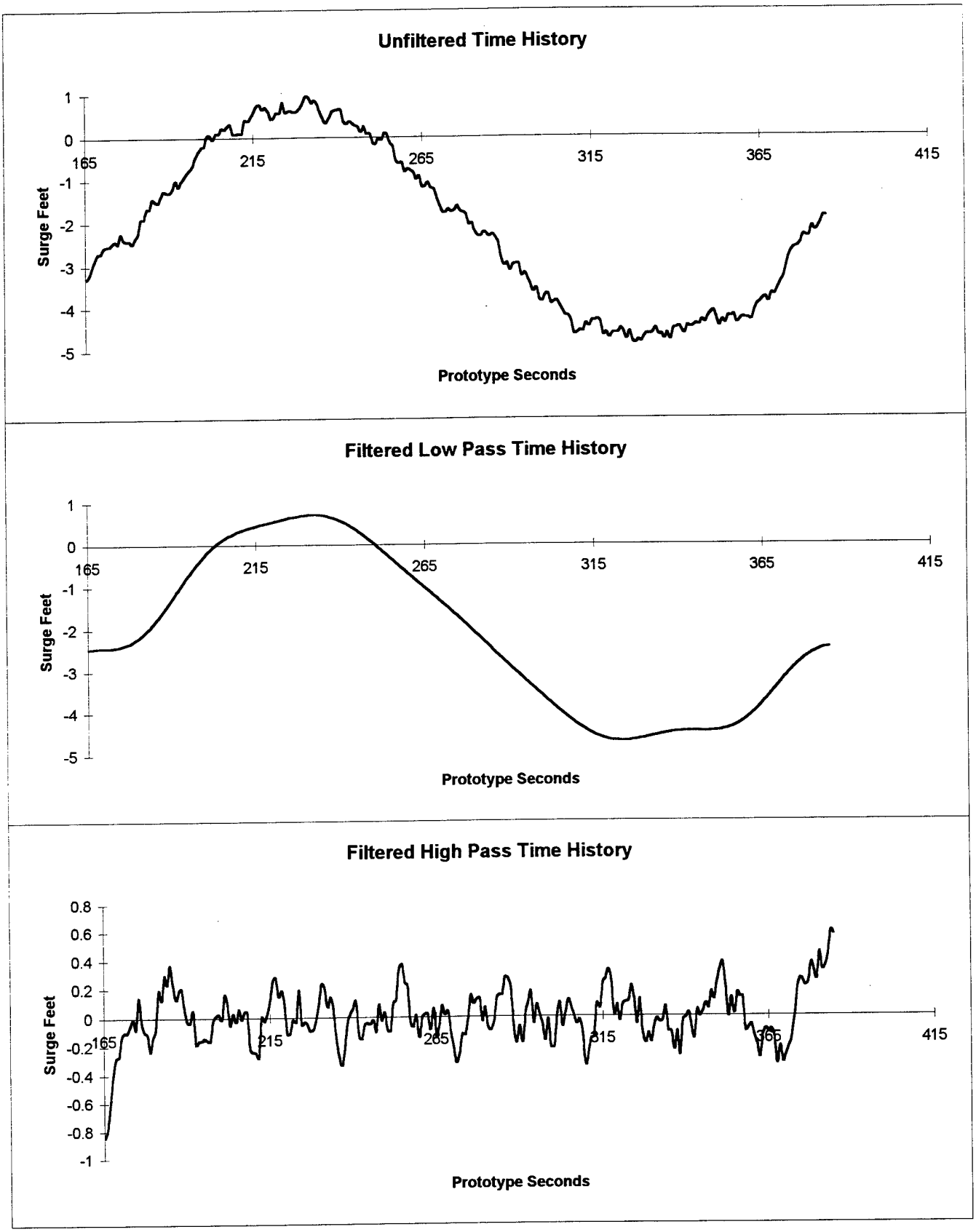
# APPENDIX I

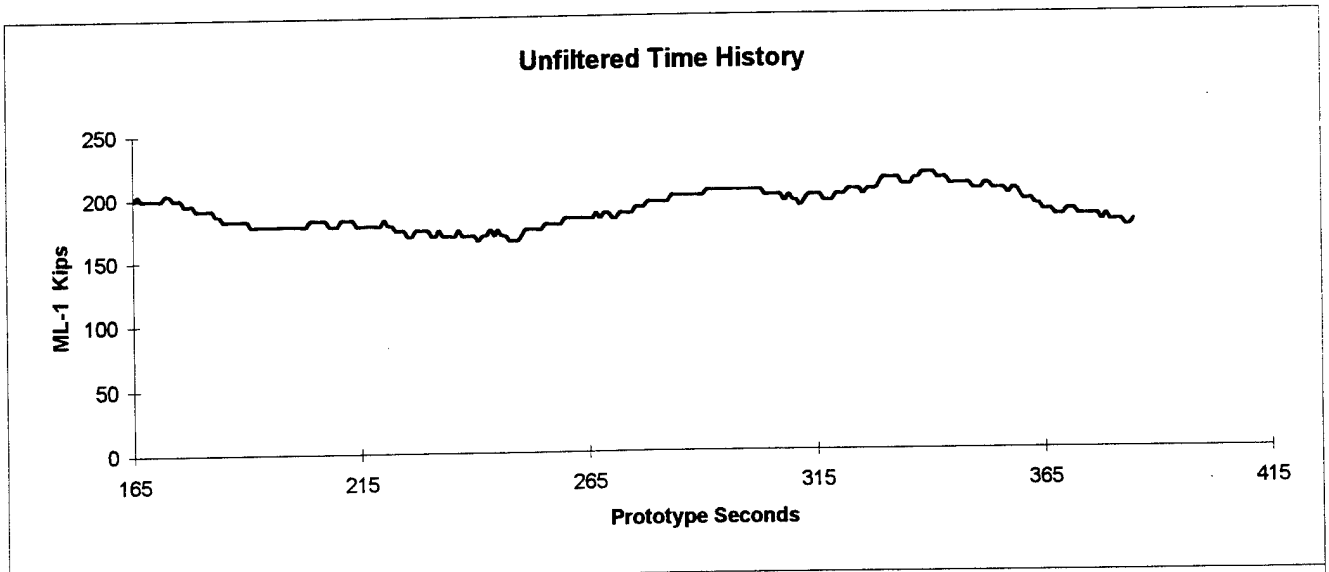
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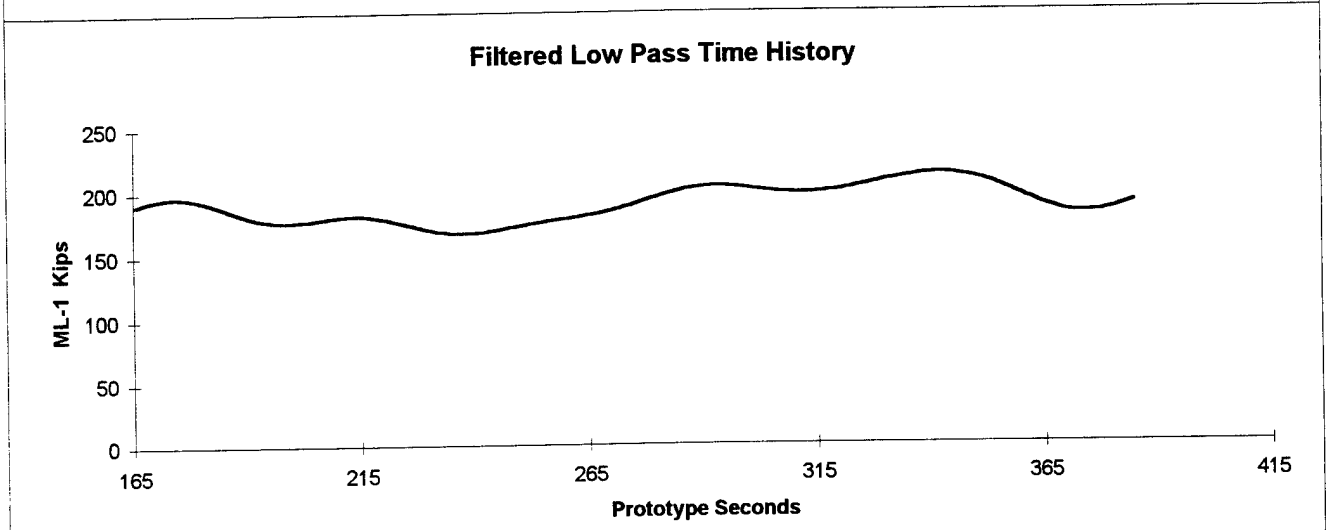
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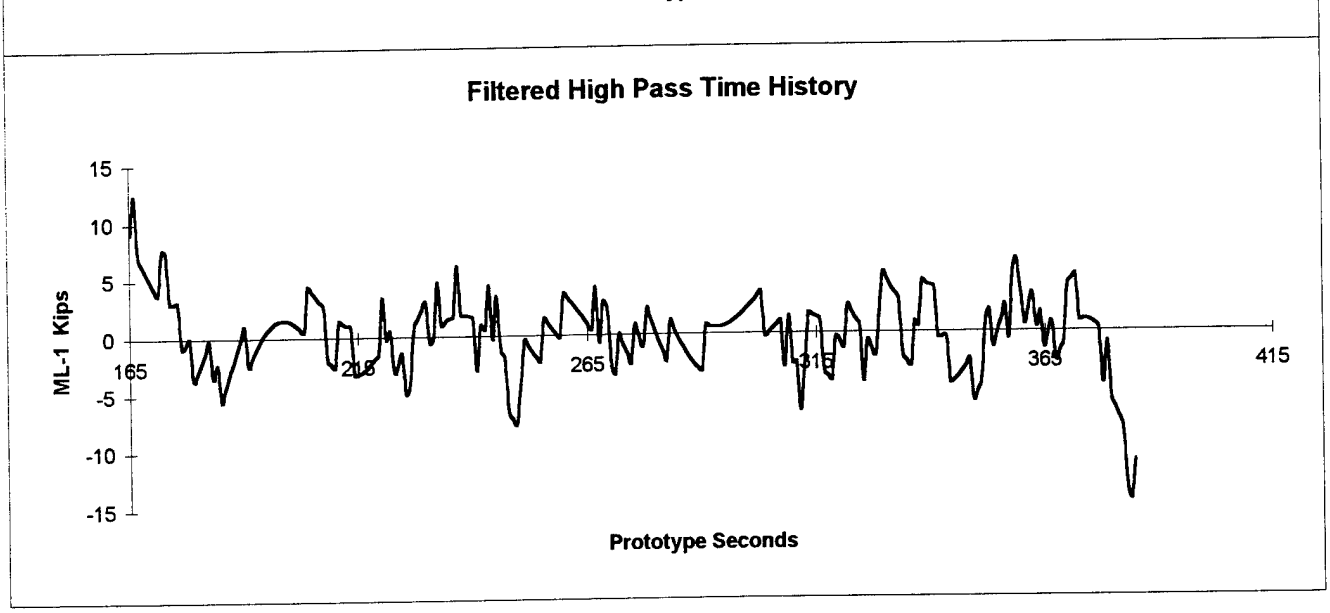

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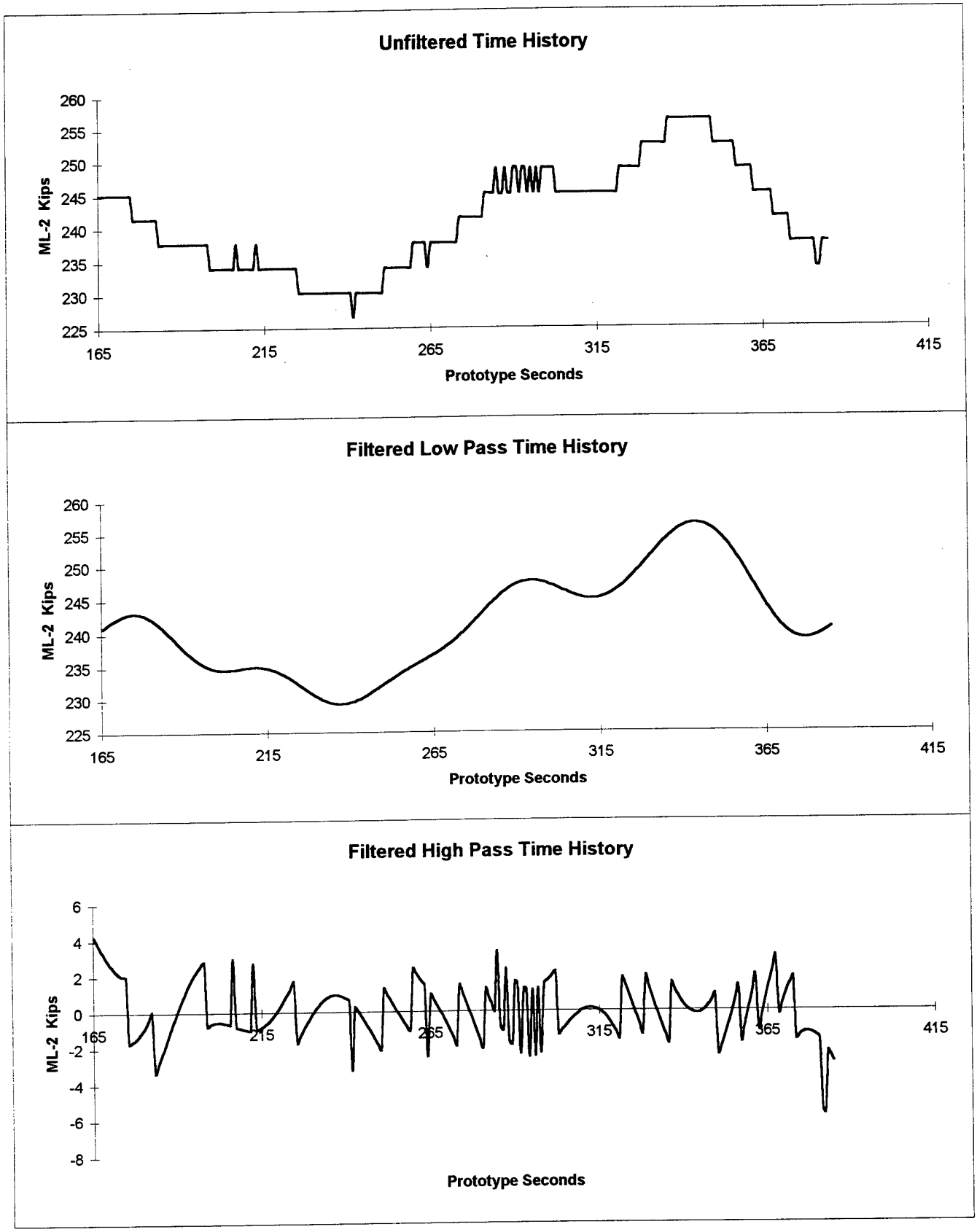

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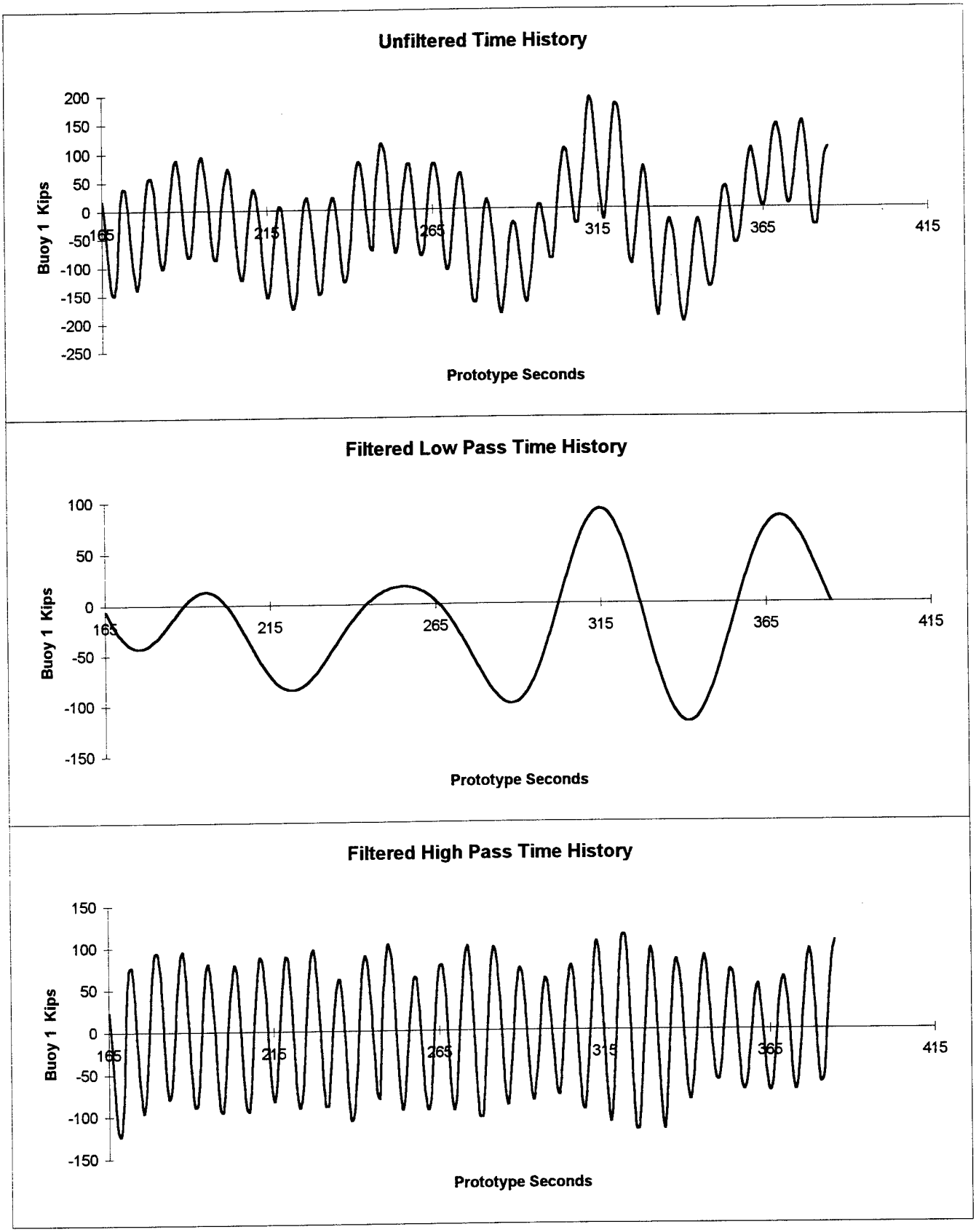

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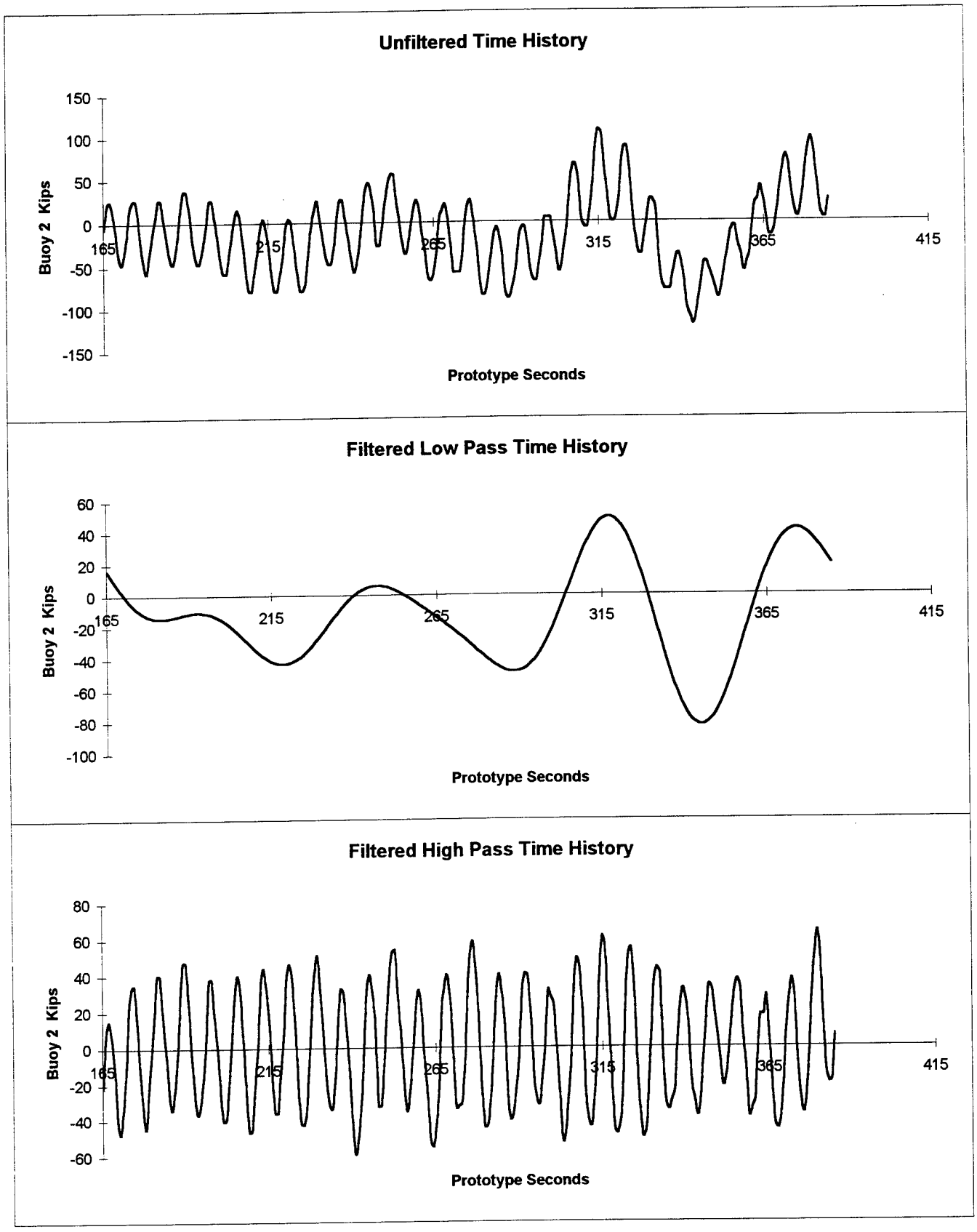

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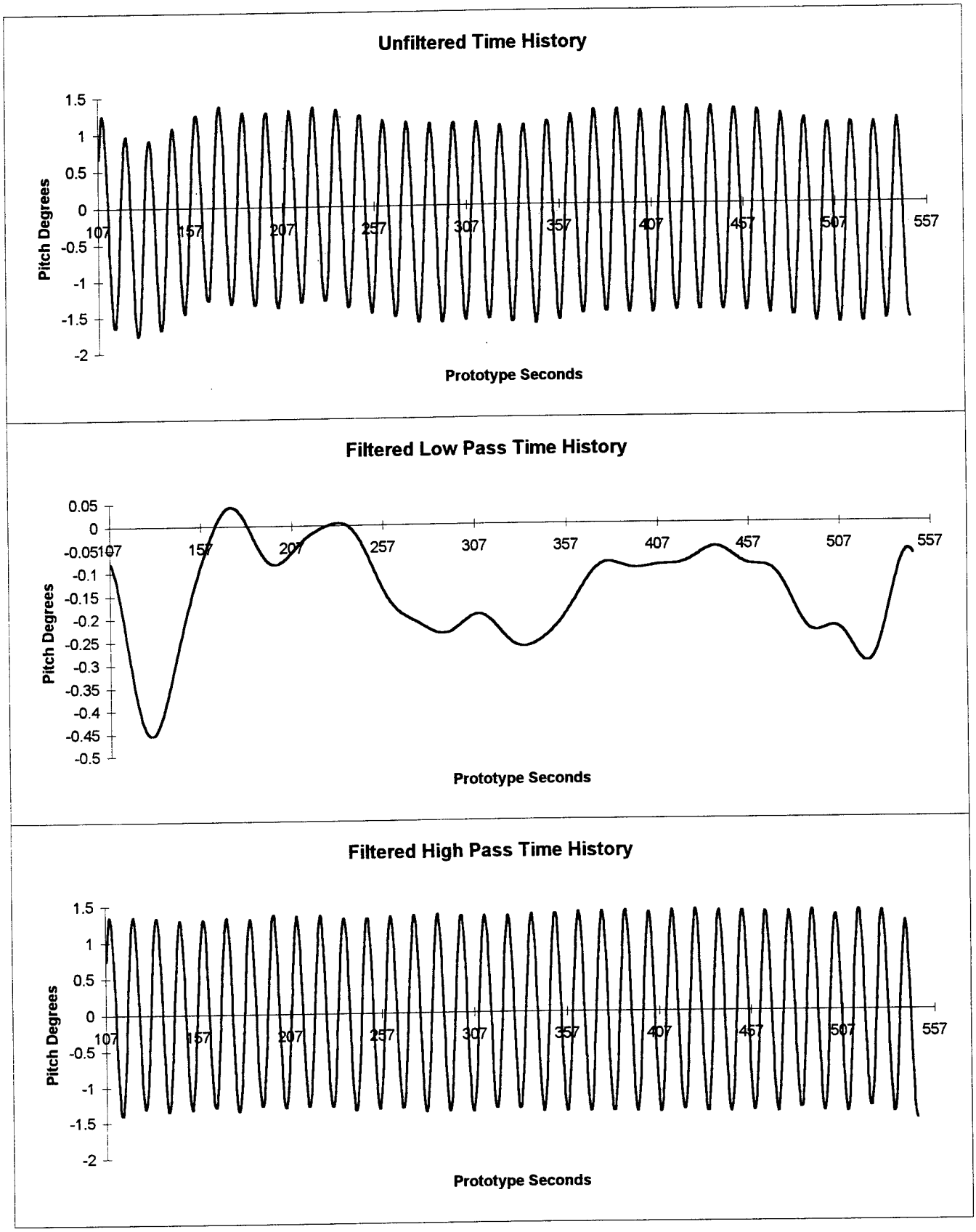

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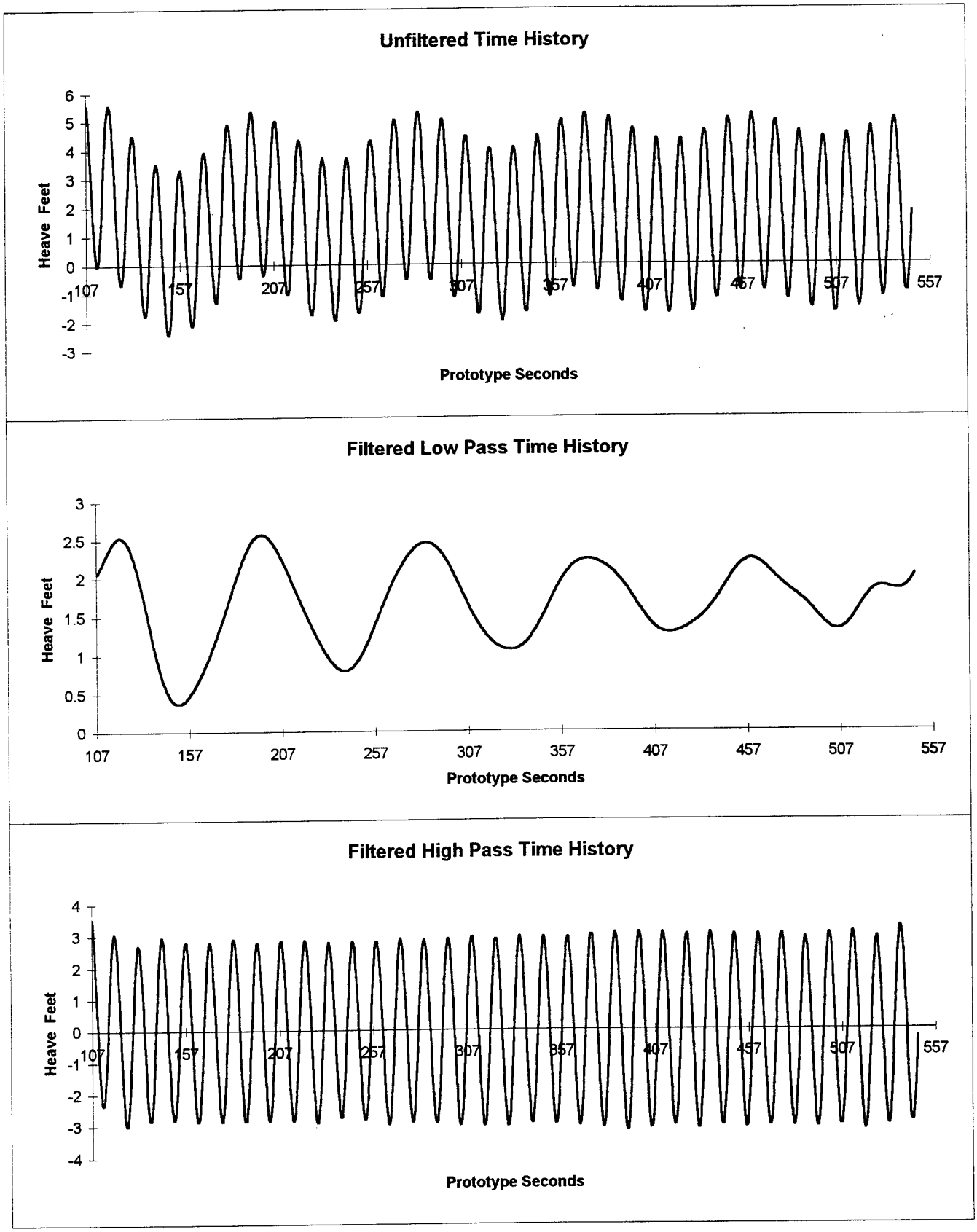

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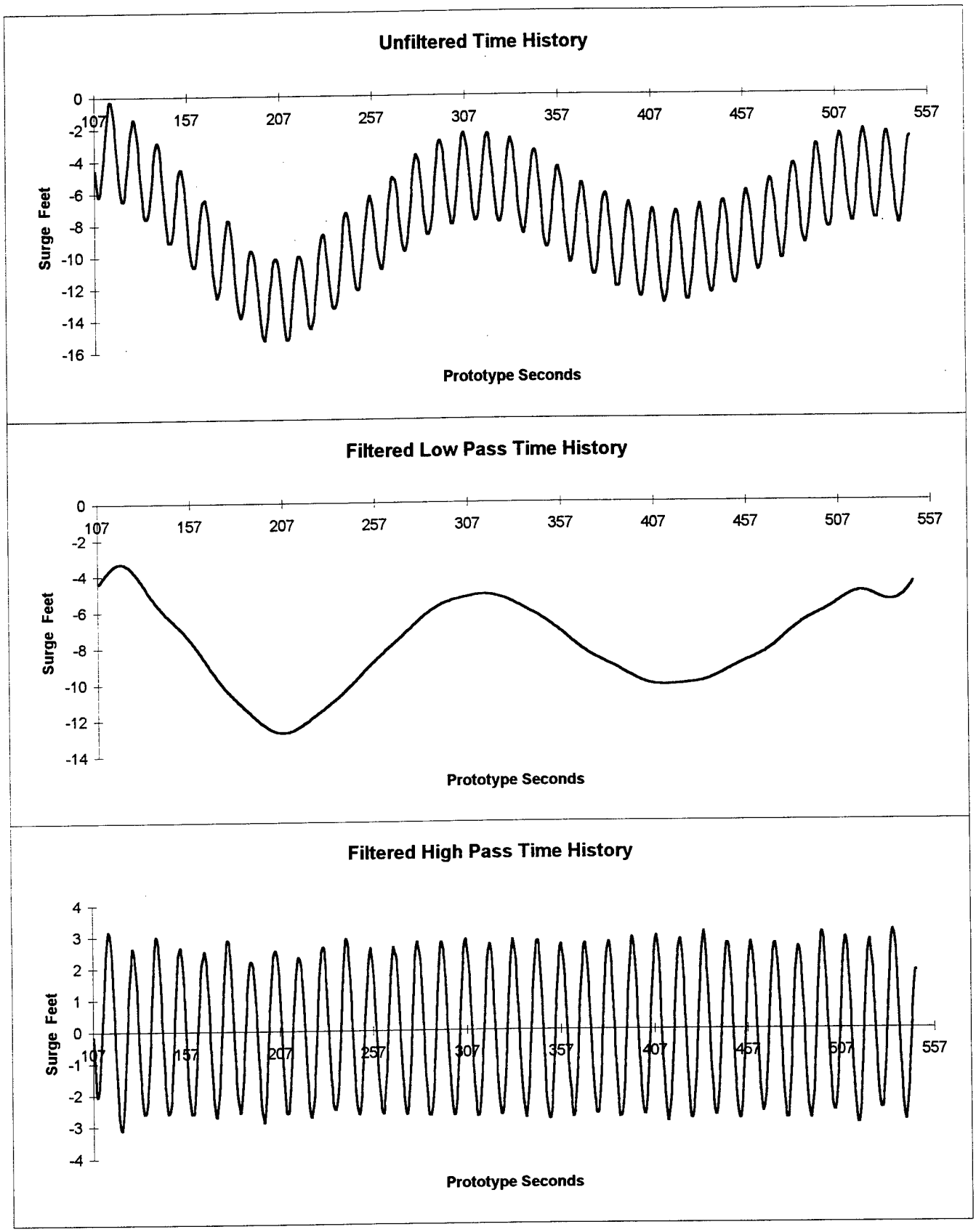

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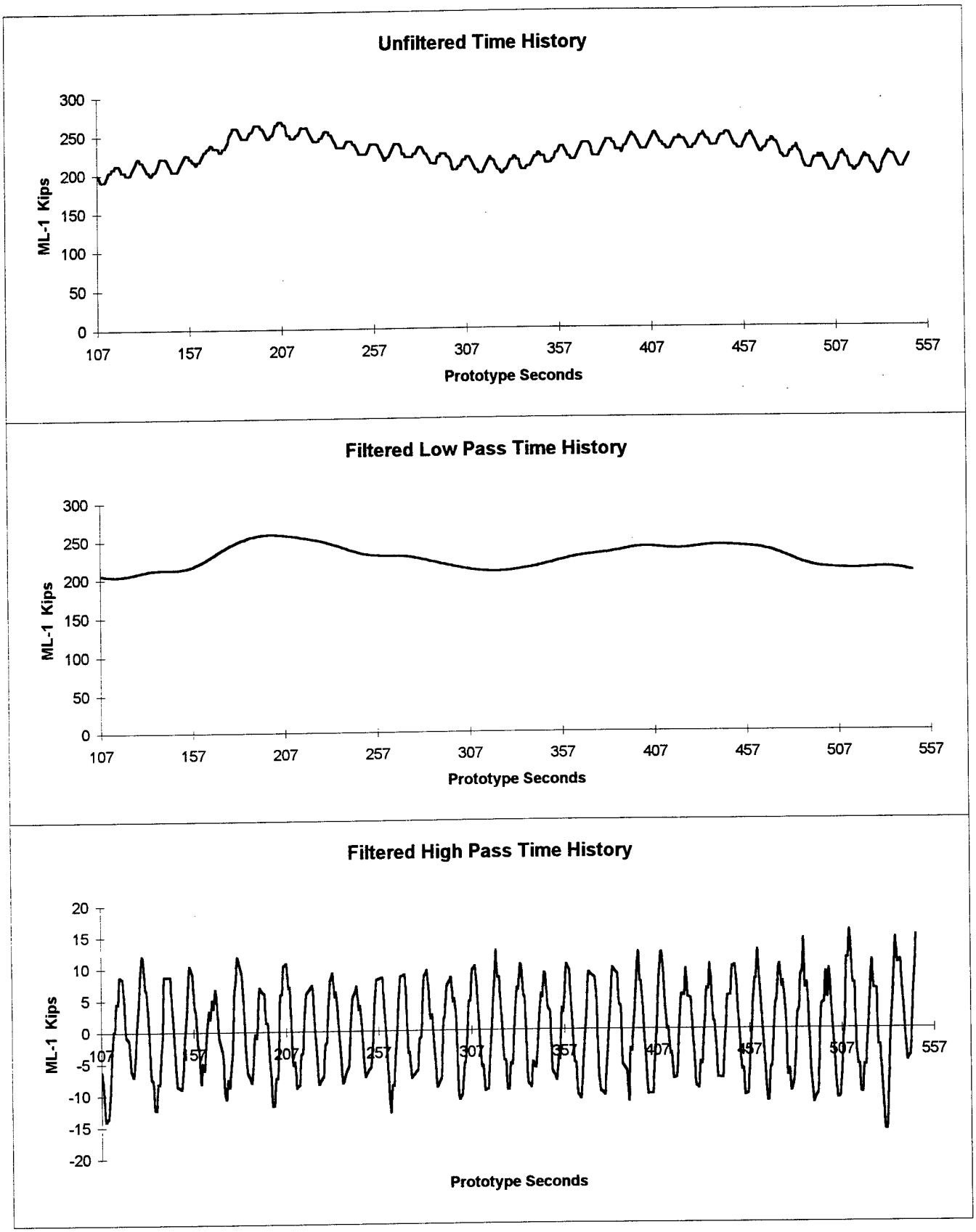

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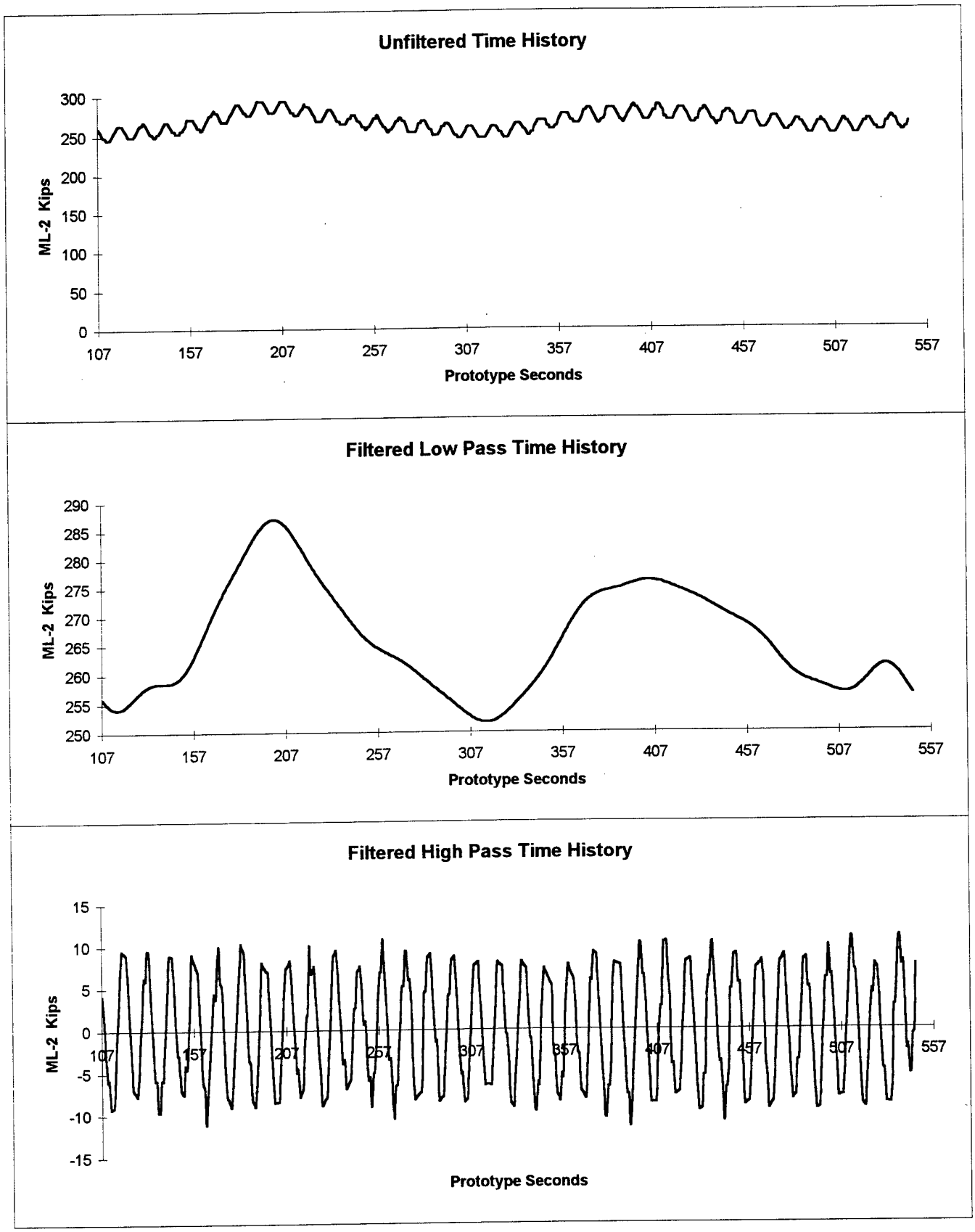

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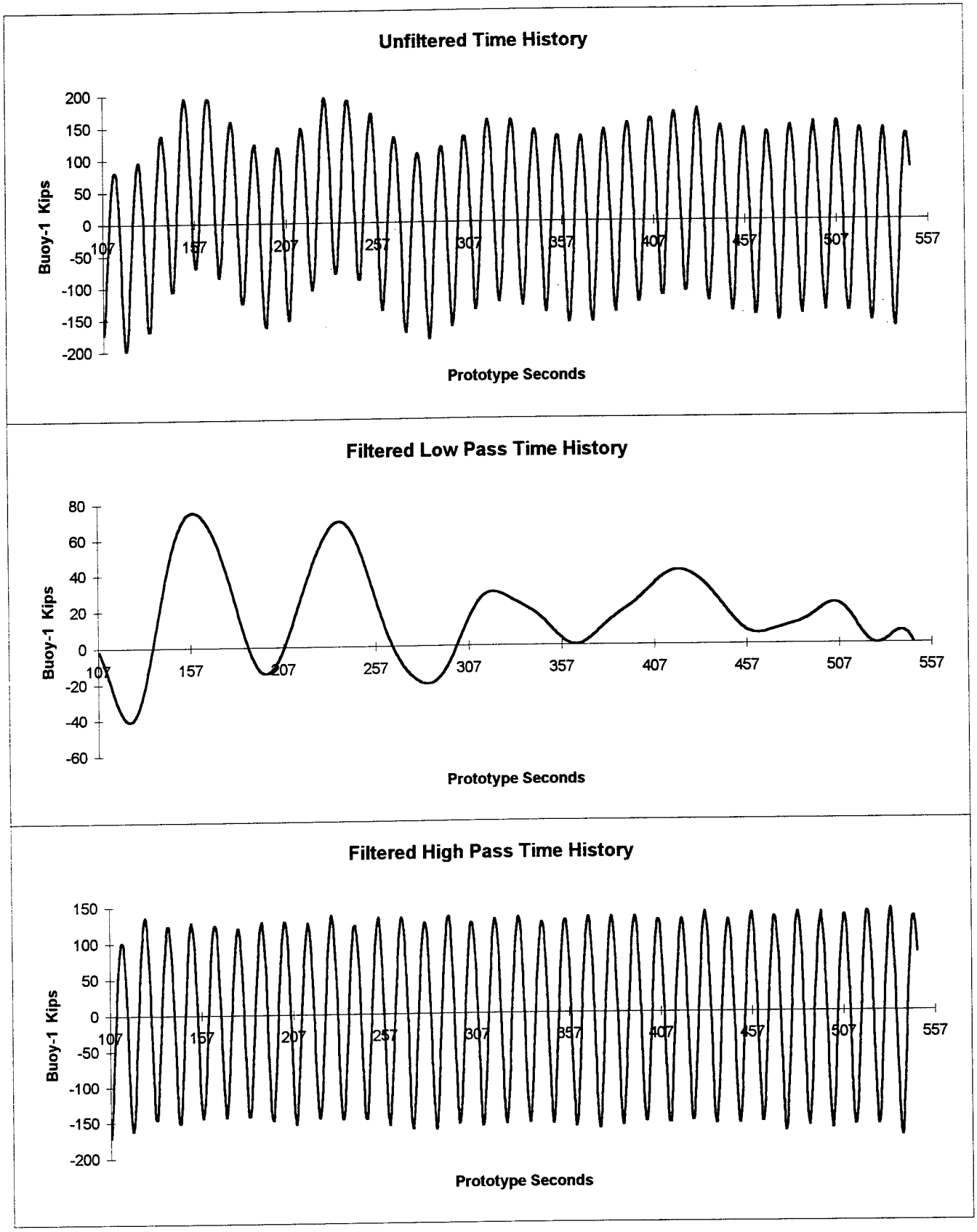

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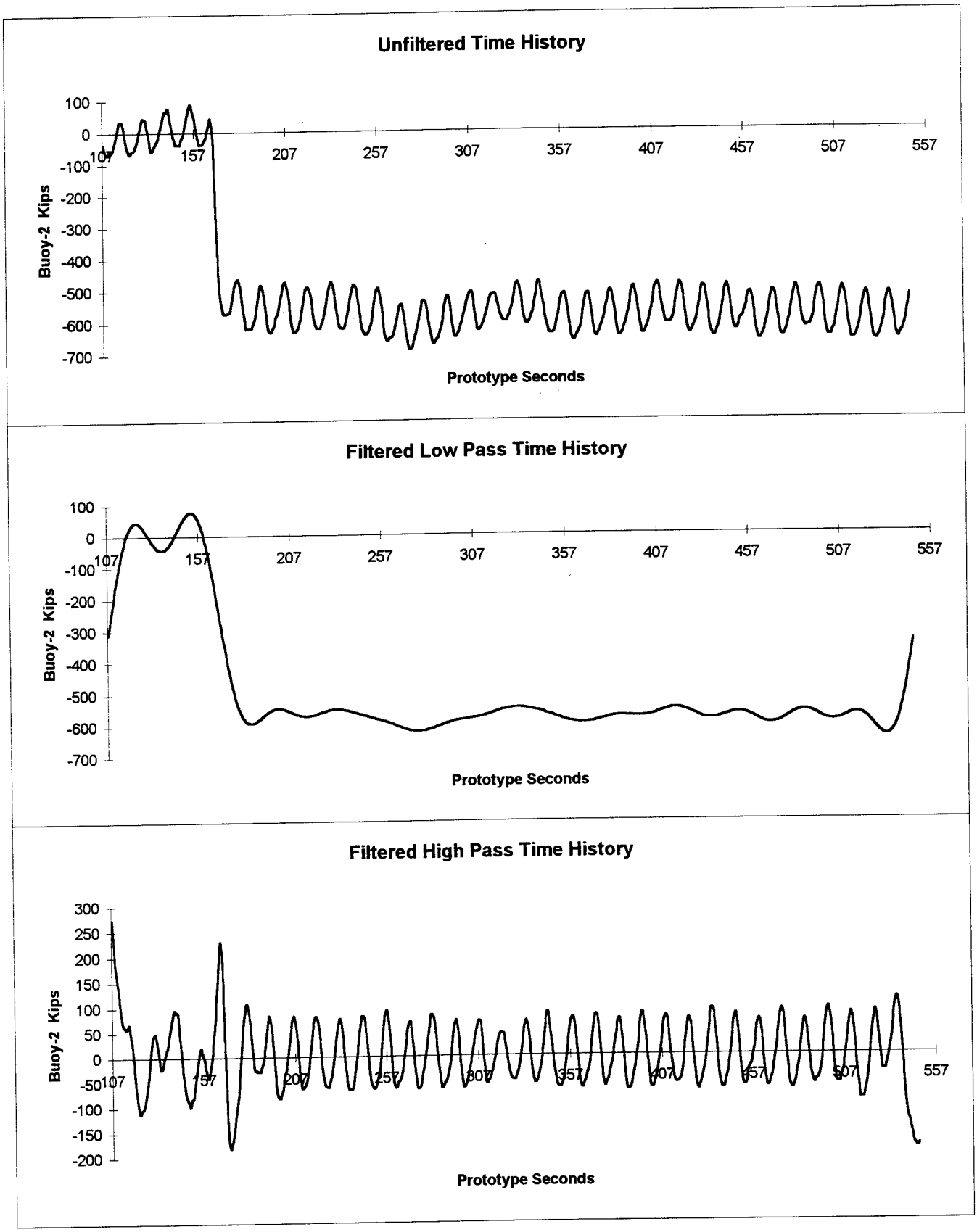

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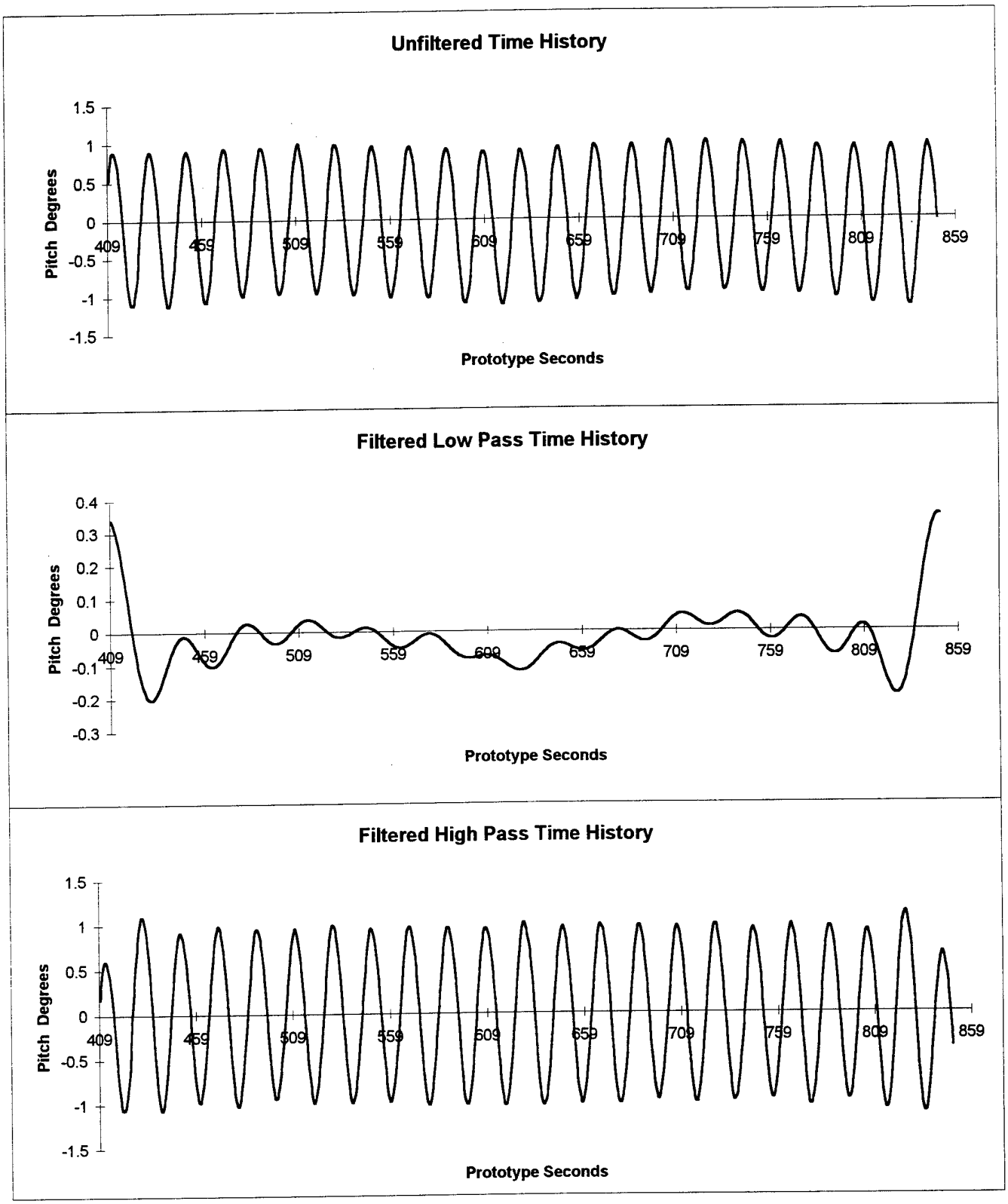

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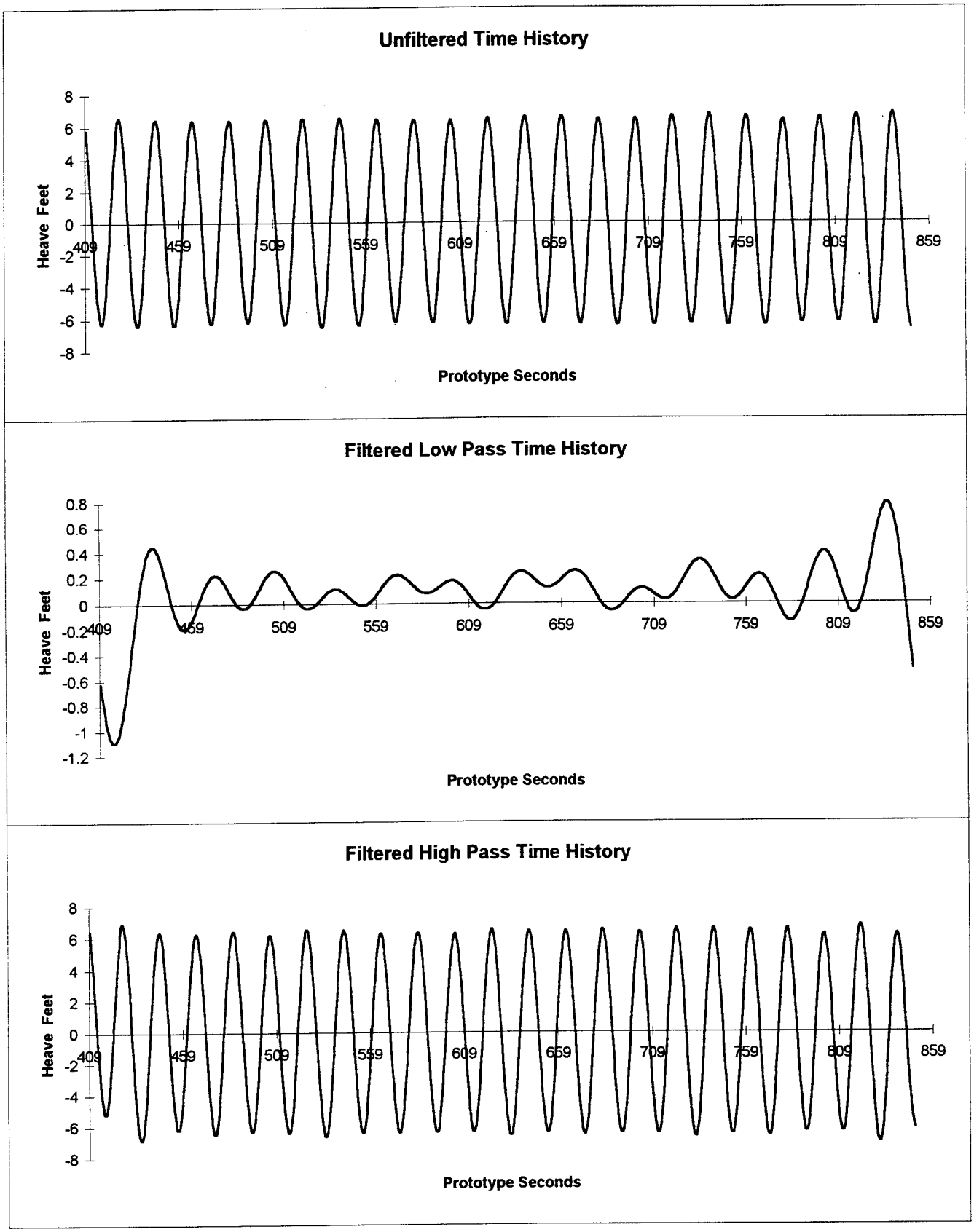

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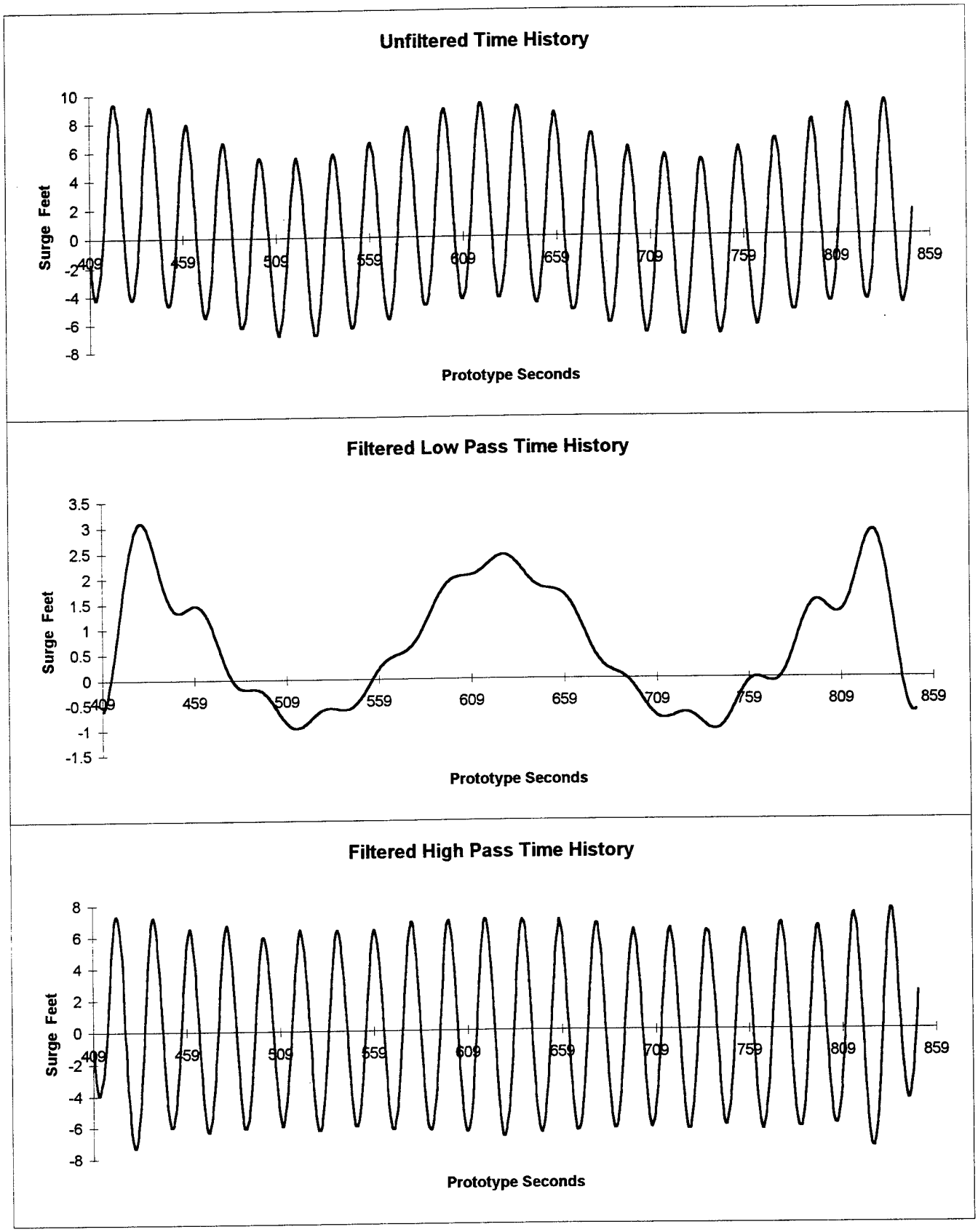

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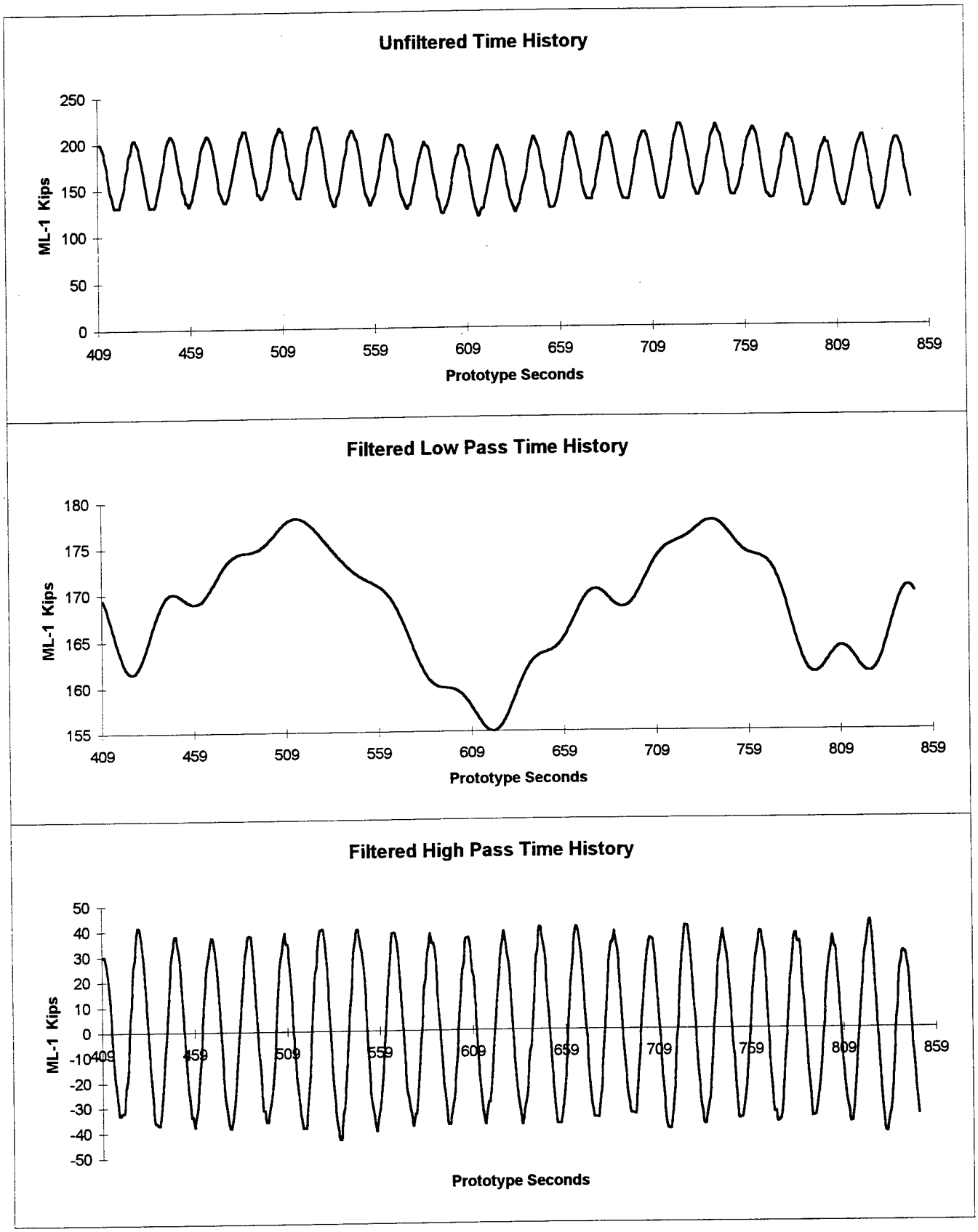

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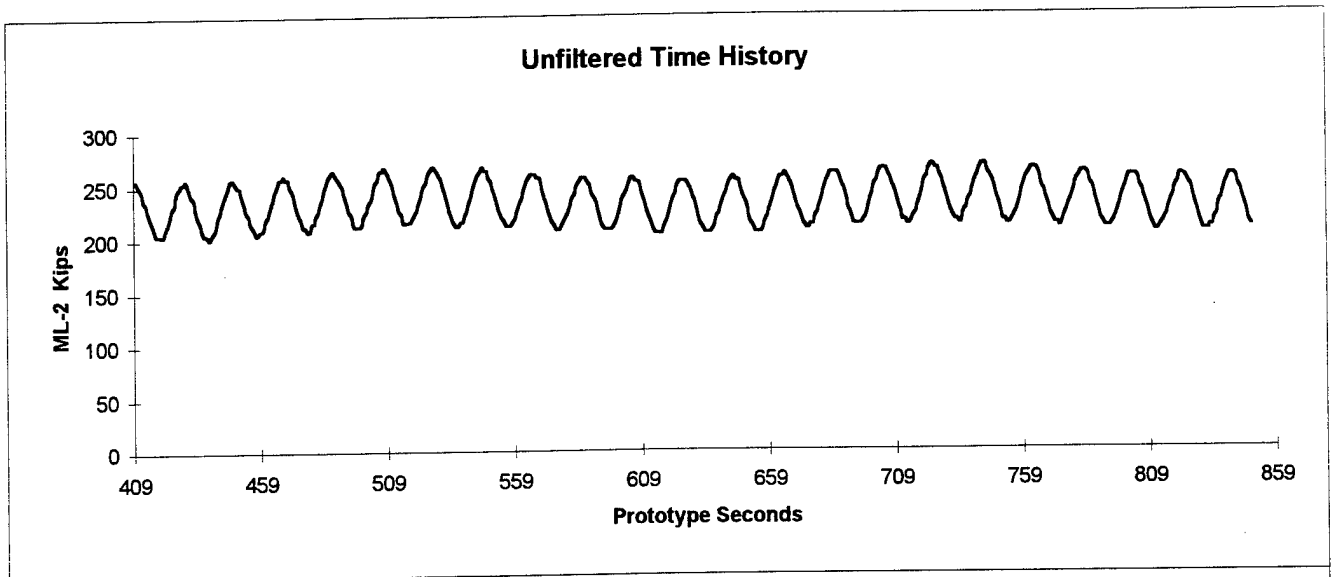

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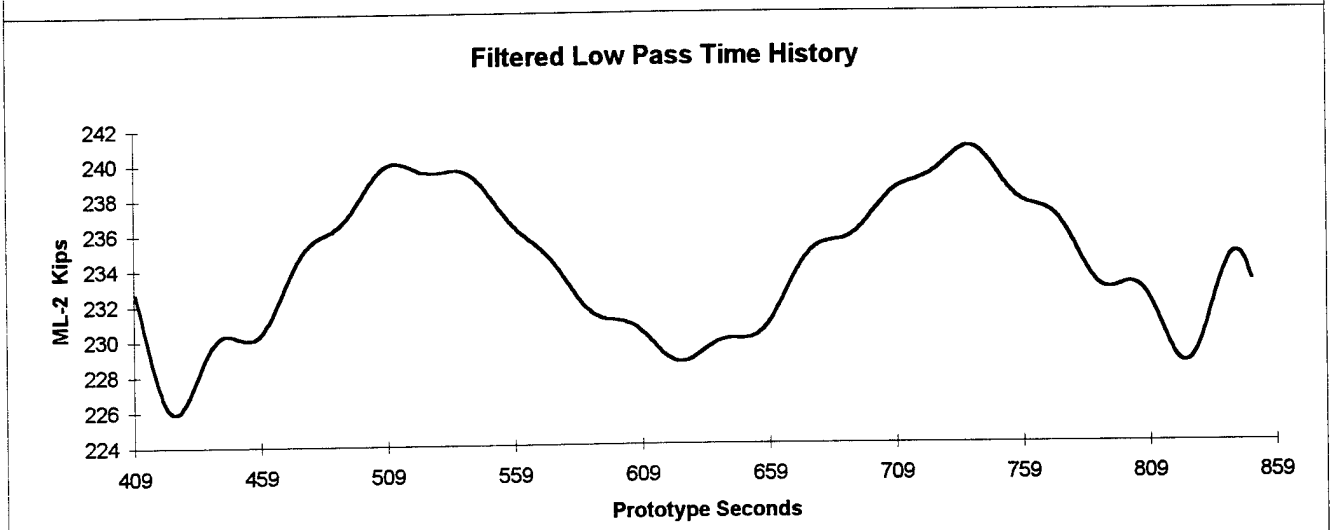

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409
459
509
559
609
659
709
759
809
859
Prototype Seconds

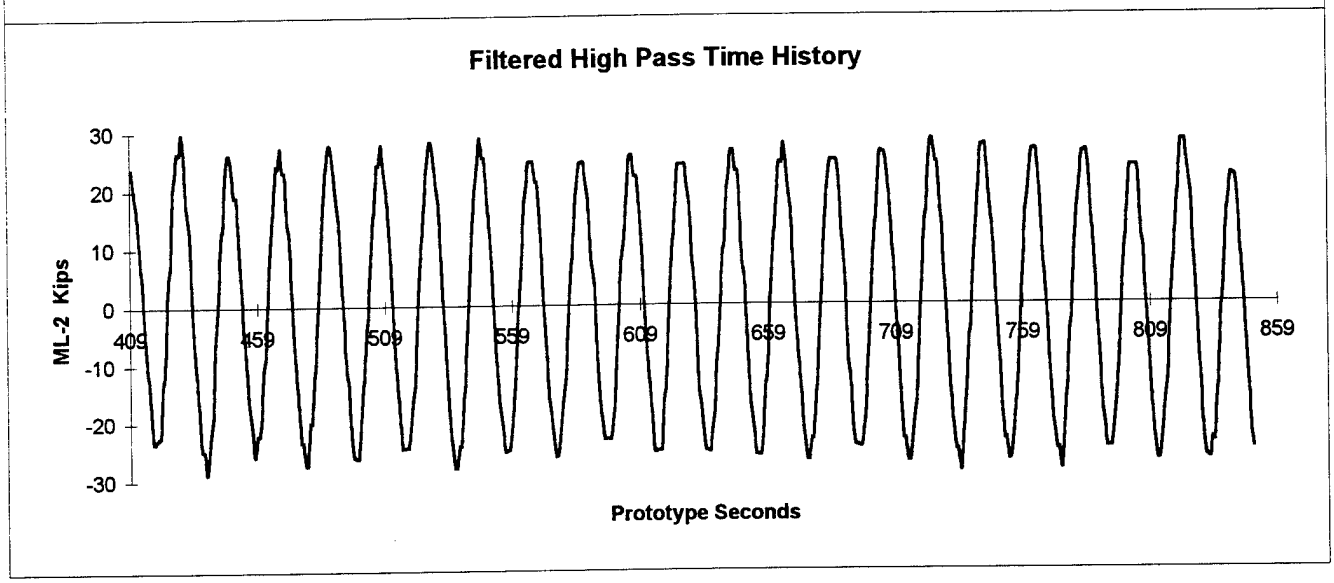

Unfiltered Time History
Heave Feet
8
6
4
2
0
-2
-4
-6
-8
409
459
509
559
609
659
709
759
809
859
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
-1.2
409
459
509
559
609
659
709
759
809
859
Prototype Seconds
Filtered High Pass Time History
Heave Feet
8
6
4
2
0
-2
-4
-6
-8
409
459
509
559
609
659
709
759
809
859
Prototype Seconds

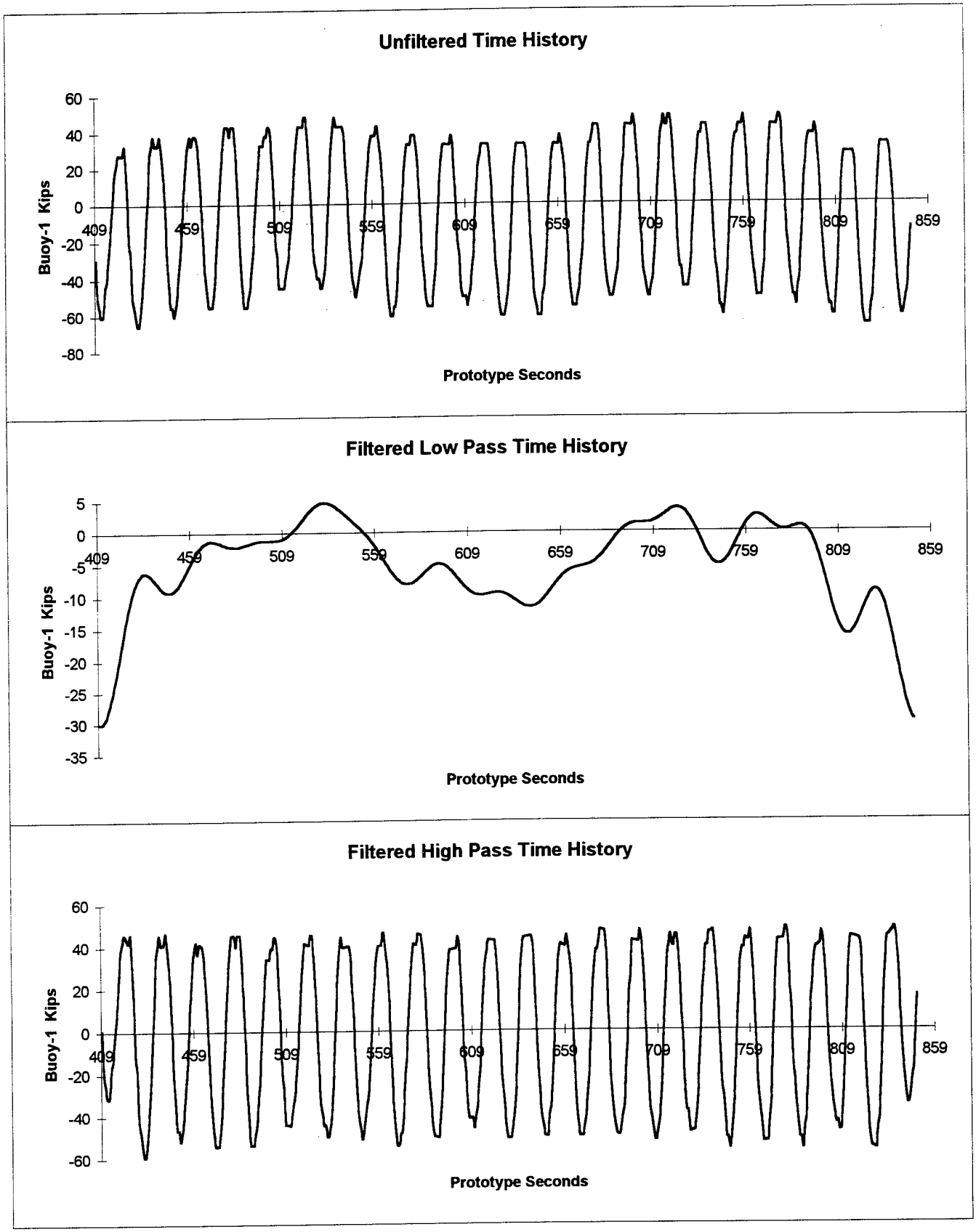

Unfiltered Time History
Surge Feet
10
8
6
4
2
0
-2
-4
-6
-8
409
459
509
559
609
659
709
759
809
859
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
3.5
3
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
409
459
509
559
609
659
709
759
809
859
Prototype Seconds
Filtered High Pass Time History
Surge Feet
8
6
4
2
0
-2
-4
-6
-8
409
459
509
559
609
659
709
759
809
859
Prototype Seconds

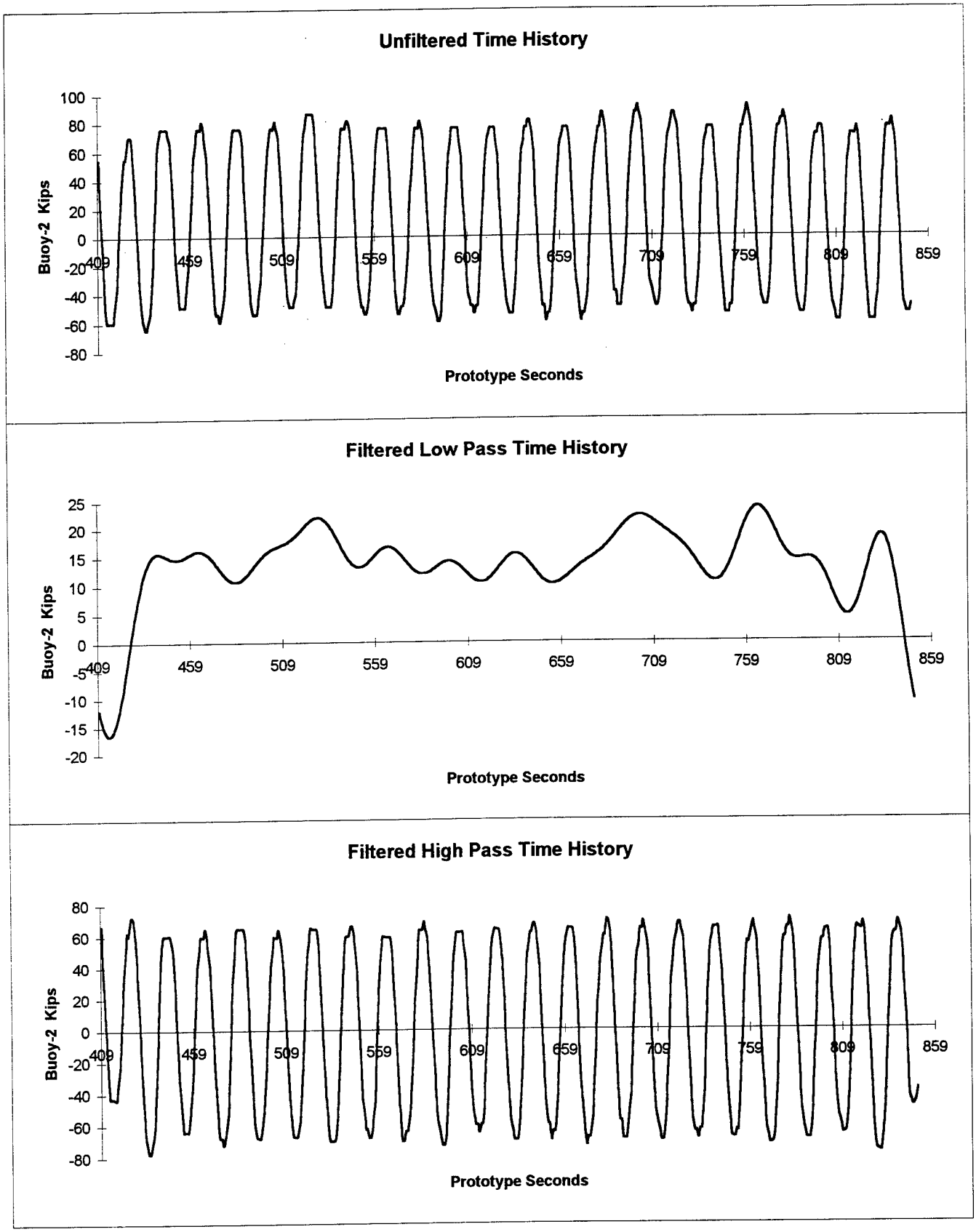

Unfiltered Time History
ML-1 Kips
250
200
150
100
50
0
409
459
509
559
609
659
709
759
809
859
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
180
175
170
165
160
155
409
459
509
559
609
659
709
759
809
859
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
50
40
30
20
10
0
-10
-20
-30
-40
-50
409
459
509
559
609
659
709
759
809
859
Prototype Seconds

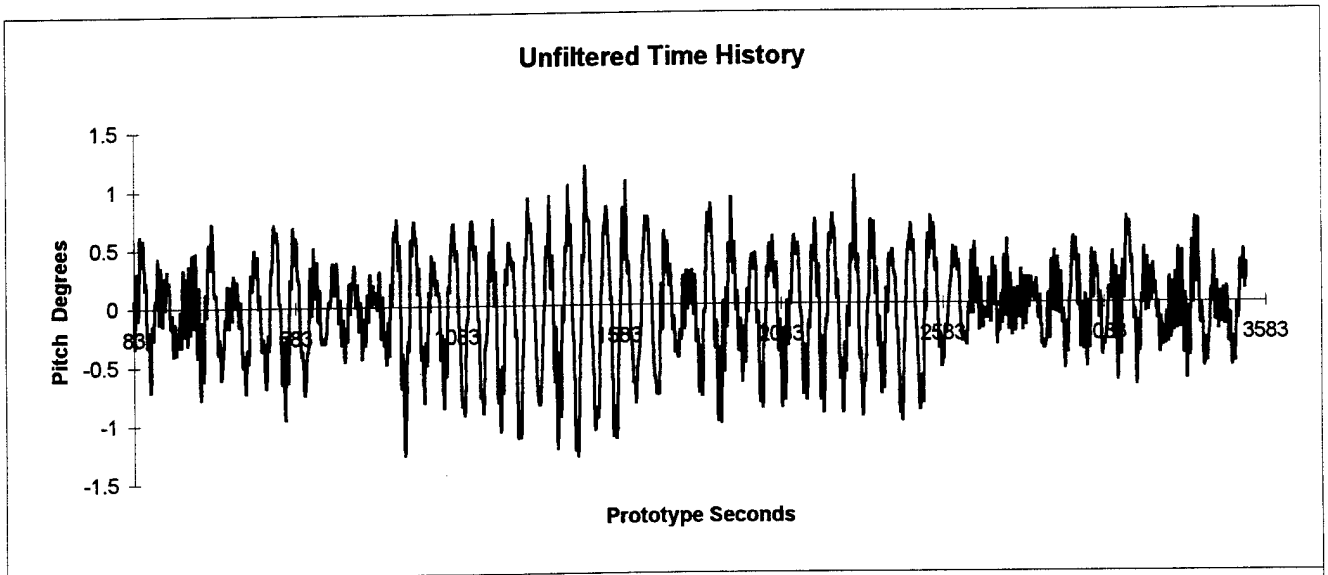

Unfiltered Time History
300
250
200
150
100
50
0
ML-2 Kips
409
459
509
559
609
659
709
759
809
859
Prototype Seconds

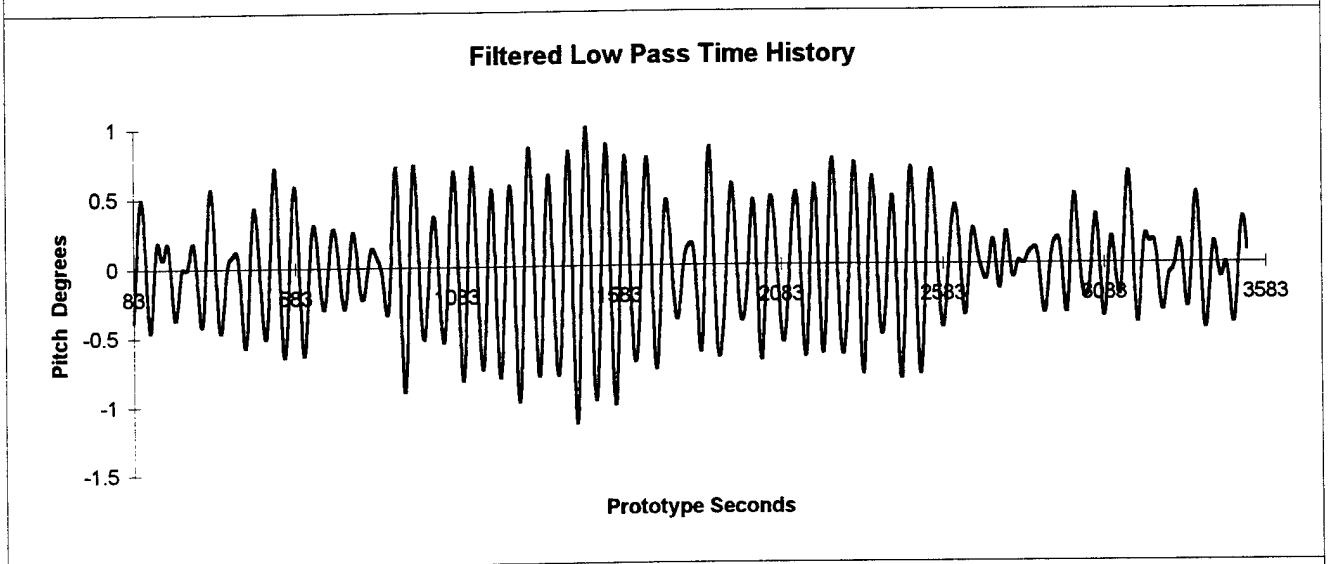

Filtered Low Pass Time History
242
240
238
236
234
232
230
228
226
224
ML-2 Kips
409
459
509
559
609
659
709
759
809
859
Prototype Seconds

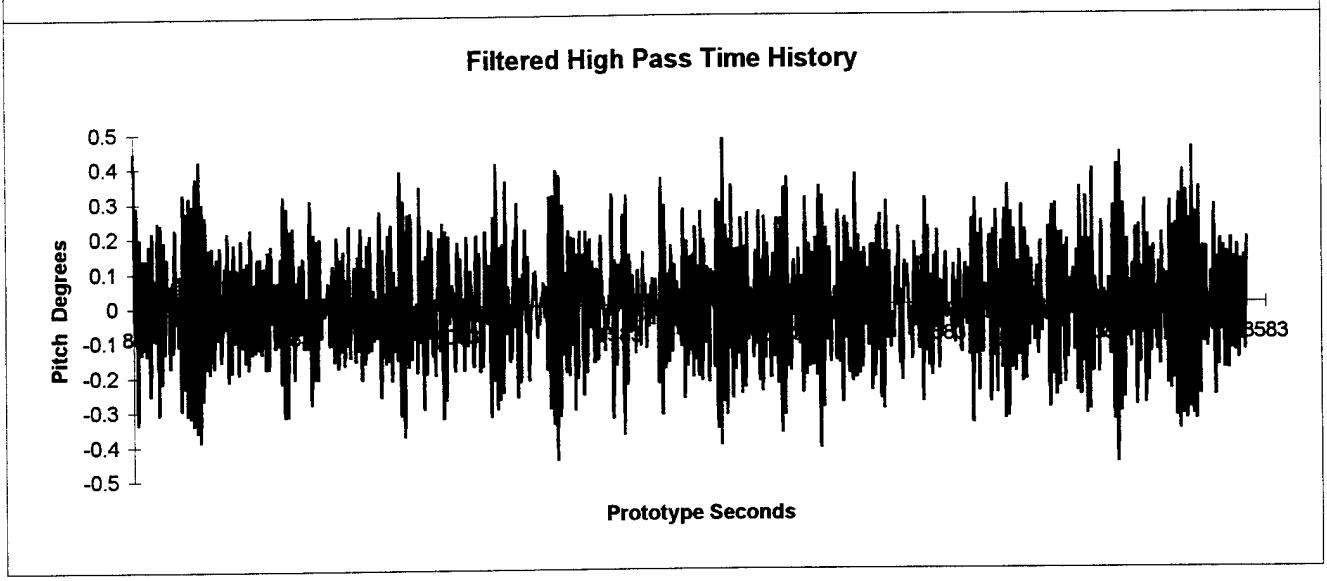

Filtered High Pass Time History
30
20
10
0
-10
-20
-30
ML-2 Kips
409
459
509
559
609
659
709
759
809
859
Prototype Seconds

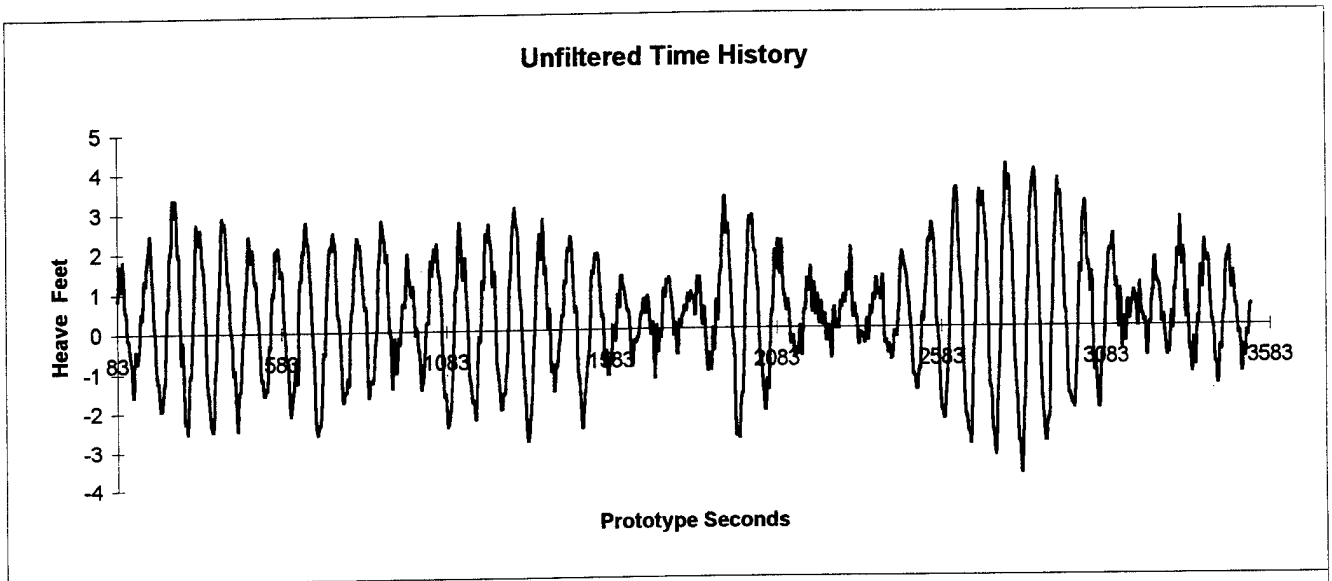

Unfiltered Time History
Buoy-1 Kips
60
40
20
0
-20
-40
-60
-80
409
459
509
559
609
659
709
759
809
859
Prototype Seconds
Filtered Low Pass Time History
Buoy-1 Kips
5
0
-5
-10
-15
-20
-25
-30
-35
409
459
509
559
609
659
709
759
809
859
Prototype Seconds
Filtered High Pass Time History
Buoy-1 Kips
60
40
20
0
-20
-40
-60
409
459
509
559
609
659
709
759
809
859
Prototype Seconds

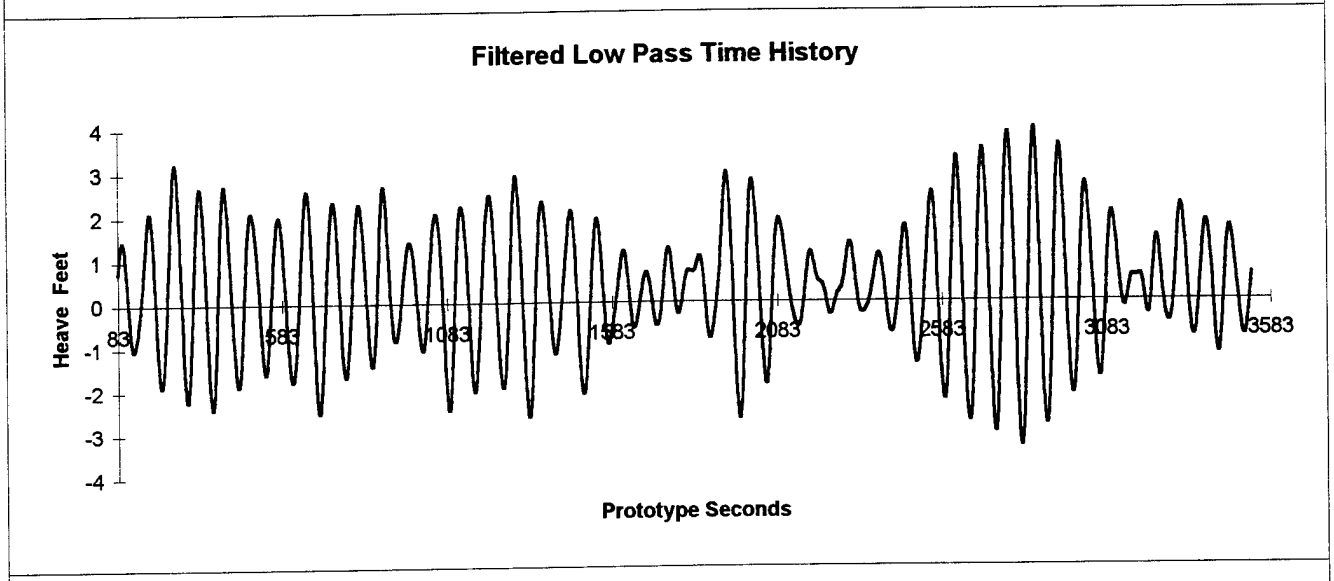

Unfiltered Time History
Buoy-2 Kips
100
80
60
40
20
0
-20
-40
-60
-80
409
459
509
559
609
659
709
759
809
859
Prototype Seconds
Filtered Low Pass Time History
Buoy-2 Kips
25
20
15
10
5
0
-5
-10
-15
-20
409
459
509
559
609
659
709
759
809
859
Prototype Seconds
Filtered High Pass Time History
Buoy-2 Kips
80
60
40
20
0
-20
-40
-60
-80
409
459
509
559
609
659
709
759
809
859
Prototype Seconds

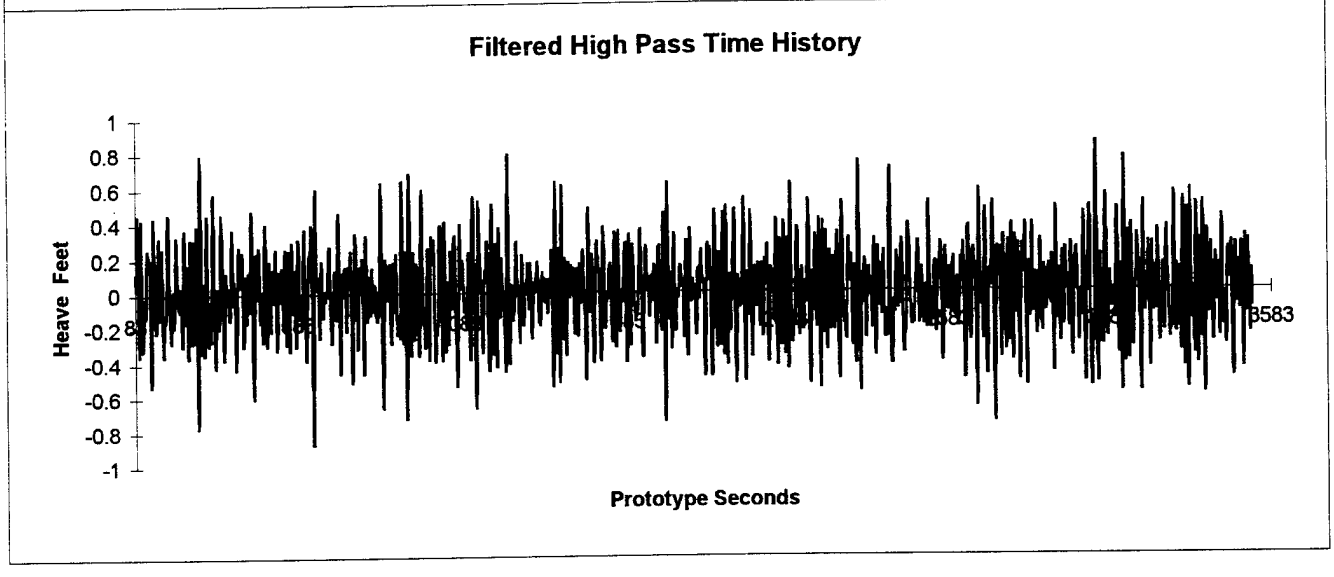

Unfiltered Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
3583
Prototype Seconds

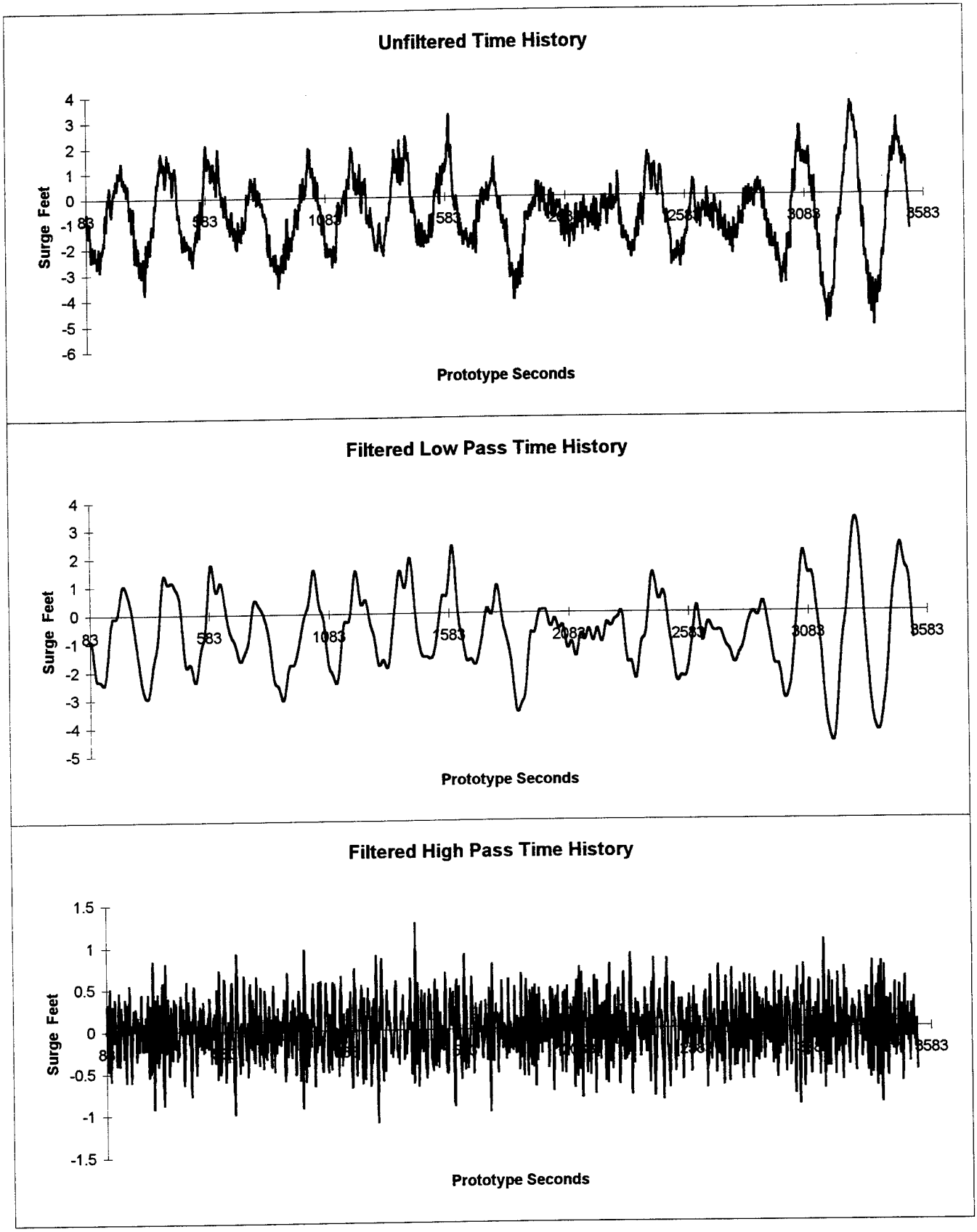

Filtered Low Pass Time History
Pitch Degrees
1
0.5
0
-0.5
-1
-1.5
3583
Prototype Seconds

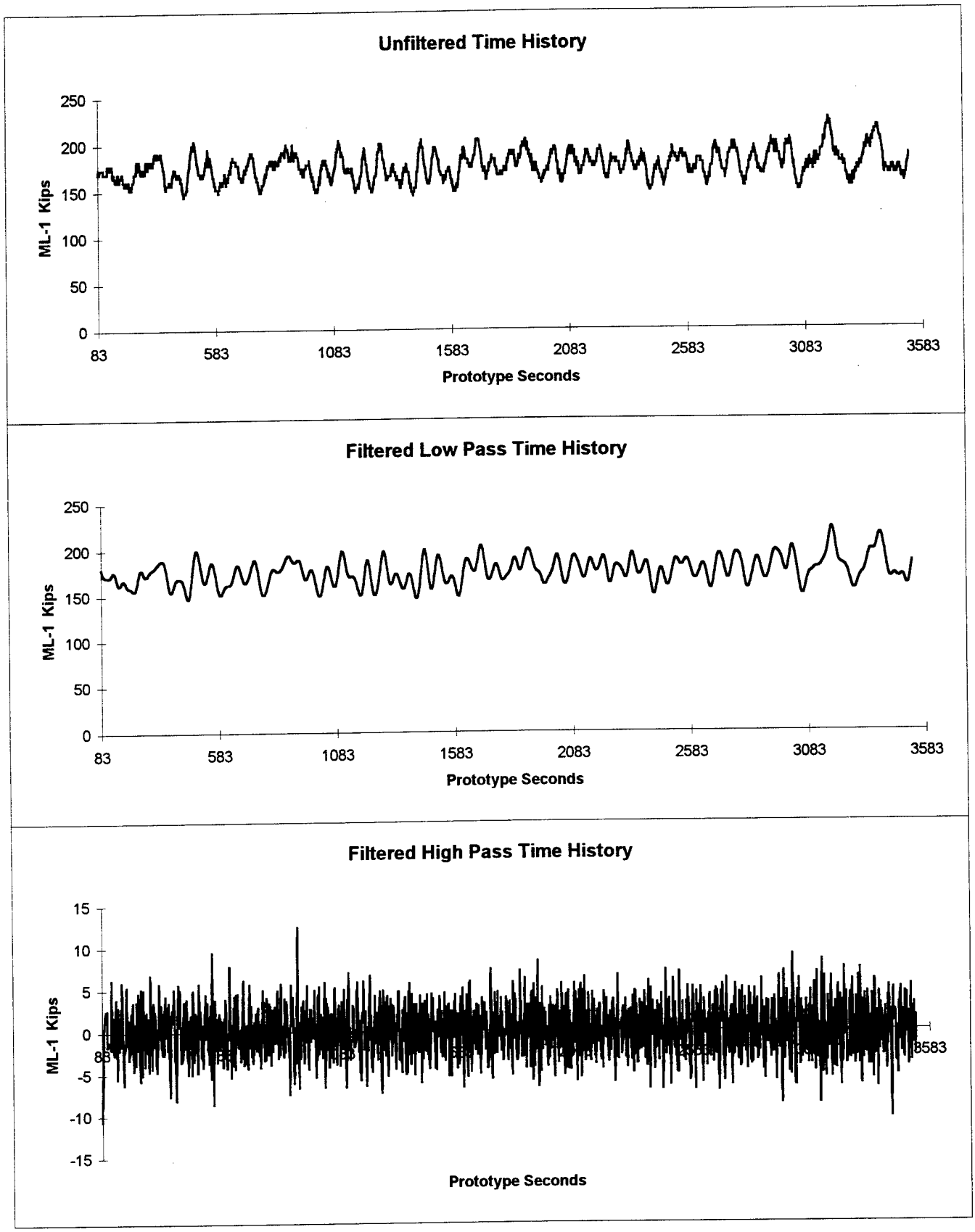

Filtered High Pass Time History
Pitch Degrees
0.5
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
3583
Prototype Seconds

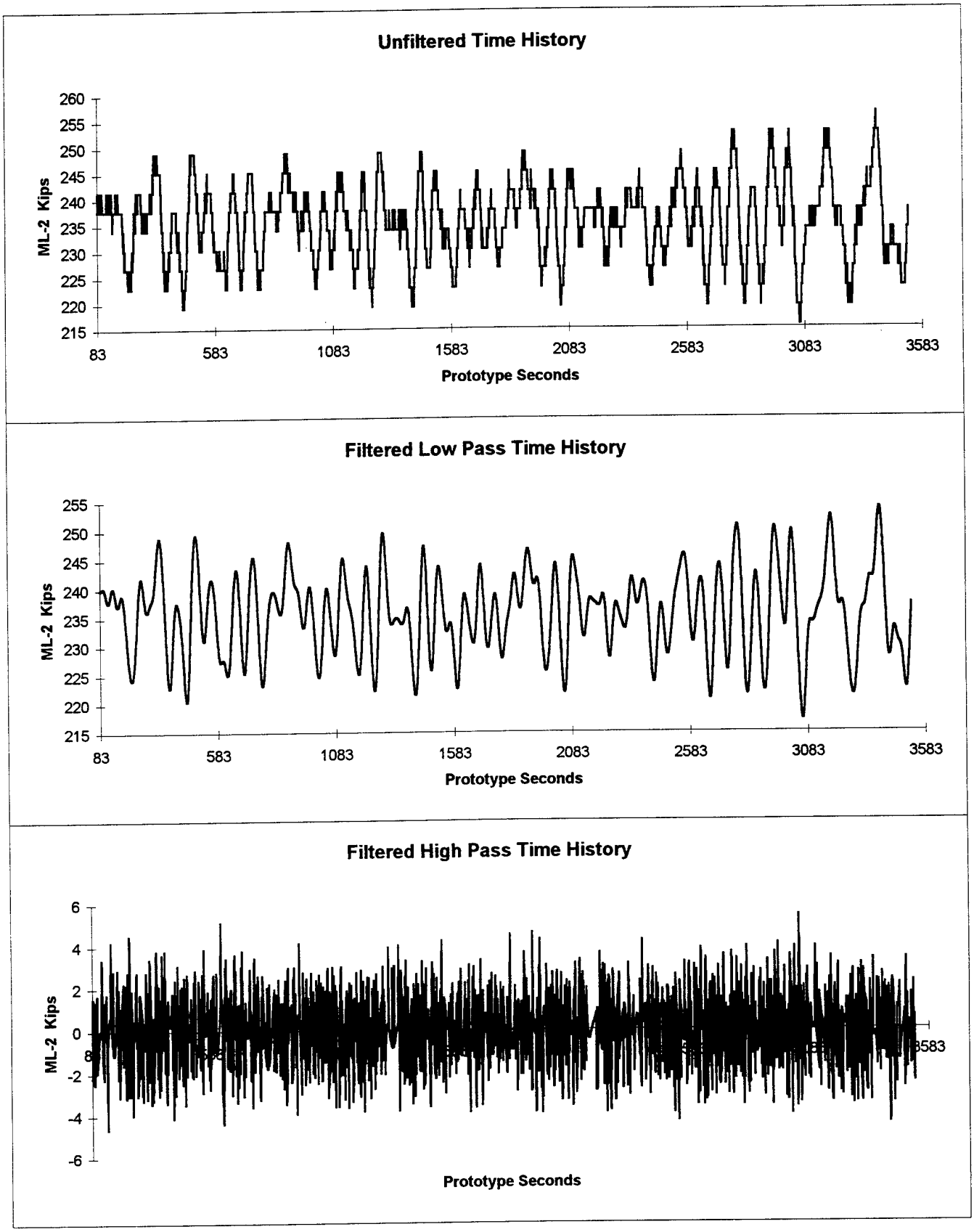

Unfiltered Time History
Heave Feet
5
4
3
2
1
0
-1
-2
-3
-4
83
583
1083
1583
2083
2583
3083
3583
Prototype Seconds

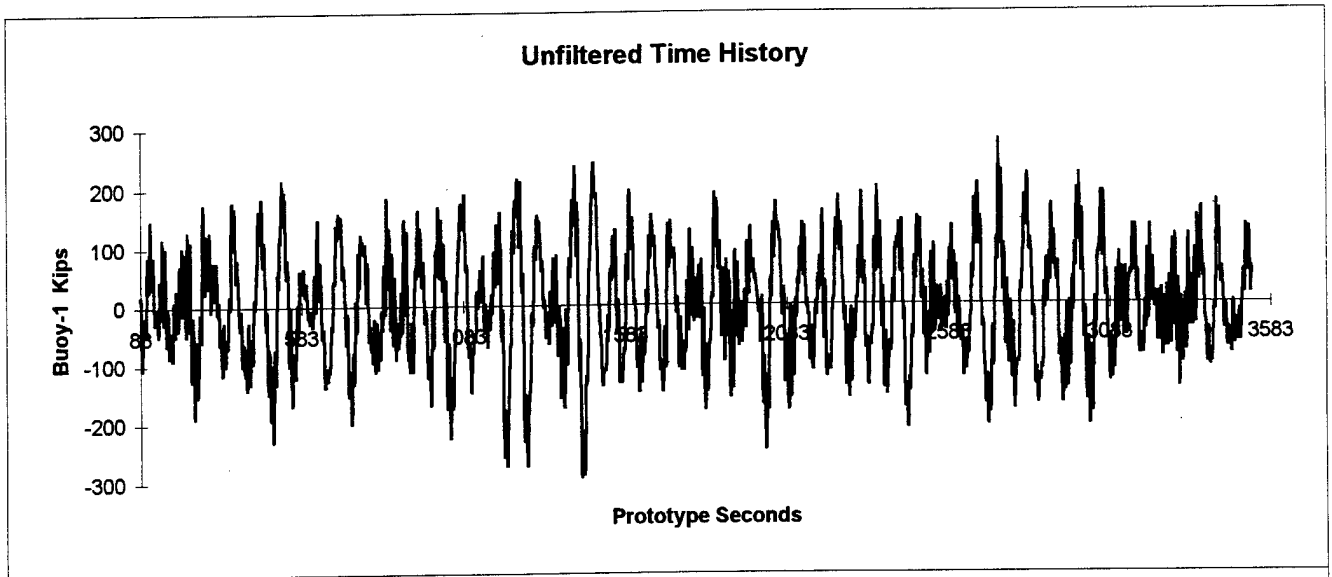

Filtered Low Pass Time History
Heave Feet
4
3
2
1
0
-1
-2
-3
-4
83
583
1083
1583
2083
2583
3083
3583
Prototype Seconds

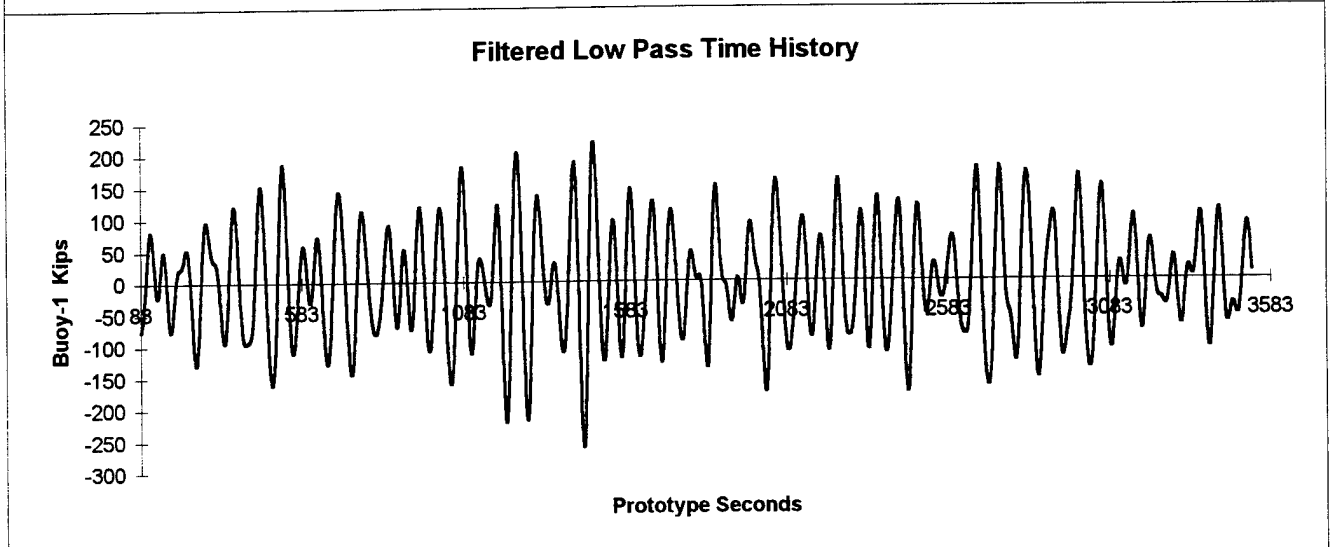

Filtered High Pass Time History
Heave Feet
1
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
-1
3583
Prototype Seconds

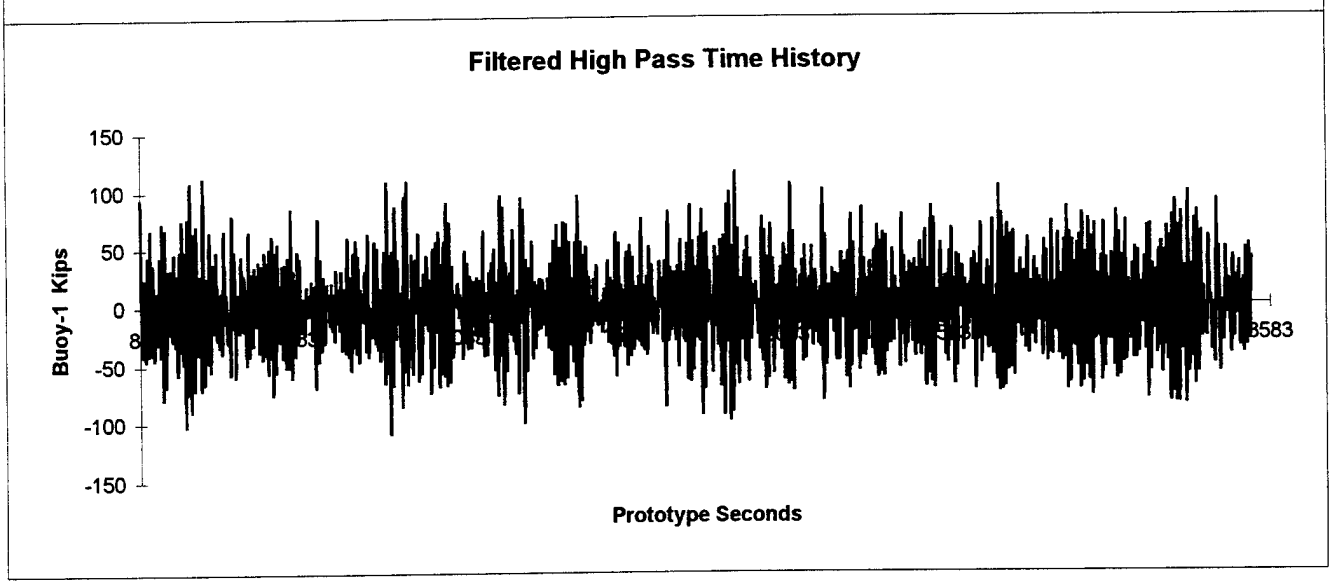

Unfiltered Time History
Surge Feet
4
3
2
1
0
-1
-2
-3
-4
-5
-6
583
1083
3083
3583
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
4
3
2
1
0
-1
-2
-3
-4
-5
583
1083
1583
3083
3583
Prototype Seconds
Filtered High Pass Time History
Surge Feet
1.5
1
0.5
0
-0.5
-1
-1.5
3583
Prototype Seconds

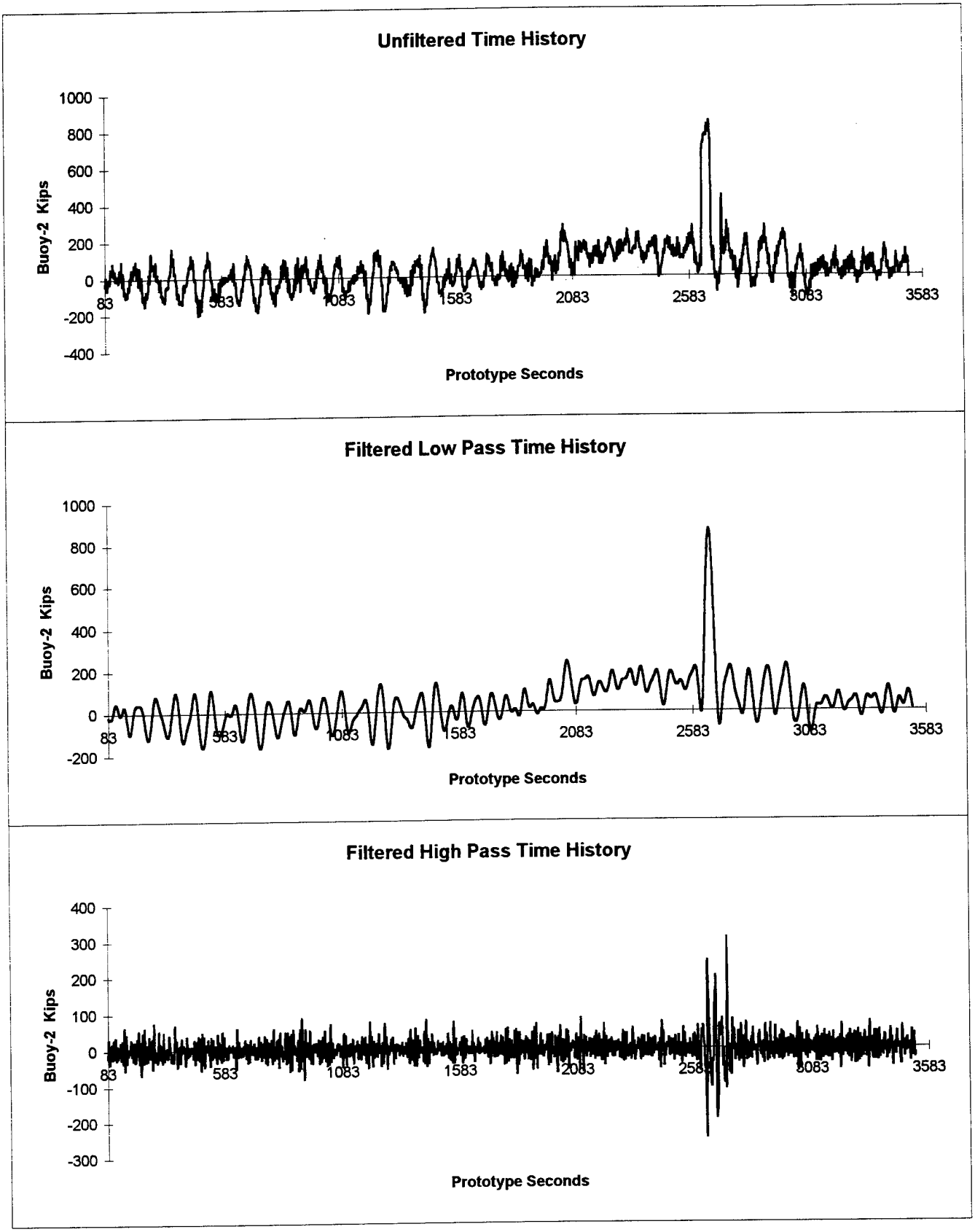

Unfiltered Time History
ML-1 Kips
250
200
150
100
50
0
83
583
1083
1583
2083
2583
3083
3583
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
250
200
150
100
50
0
83
583
1083
1583
2083
2583
3083
3583
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
15
10
5
0
-5
-10
-15
3583
Prototype Seconds

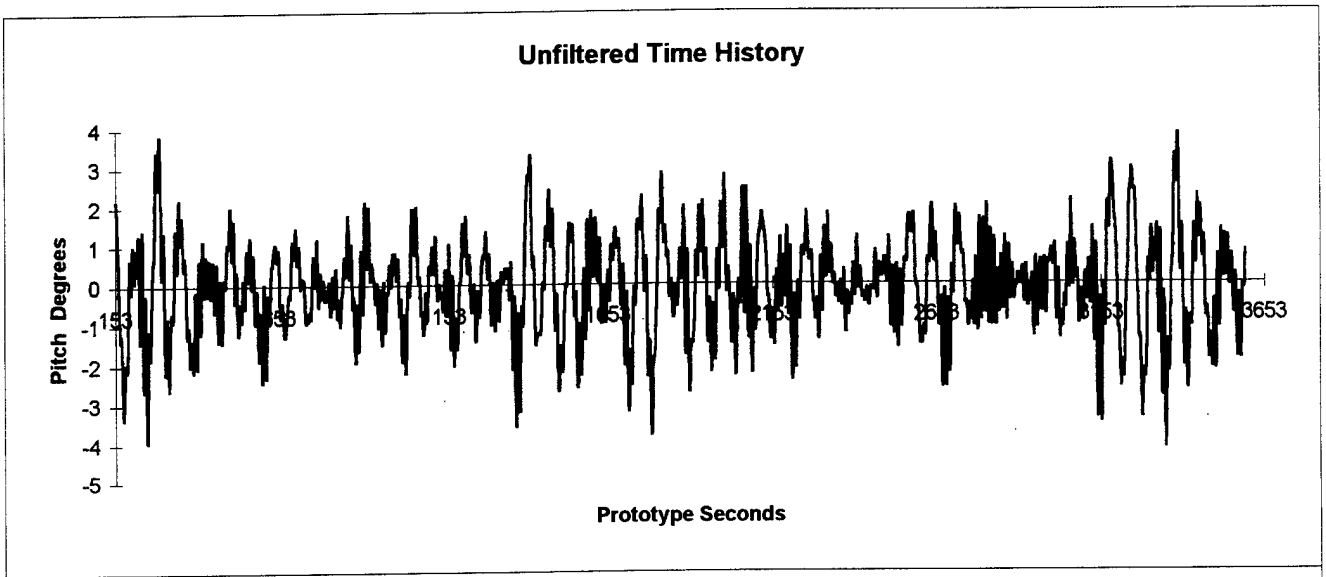

Unfiltered Time History
260
255
250
245
240
235
230
225
220
215
ML-2 Kips
83
583
1083
1583
2083
2583
3083
3583
Prototype Seconds
Filtered Low Pass Time History
255
250
245
240
235
230
225
220
215
ML-2 Kips
83
583
1083
1583
2083
2583
3083
3583
Prototype Seconds
Filtered High Pass Time History
6
4
2
0
-2
-4
-6
ML-2 Kips
Prototype Seconds

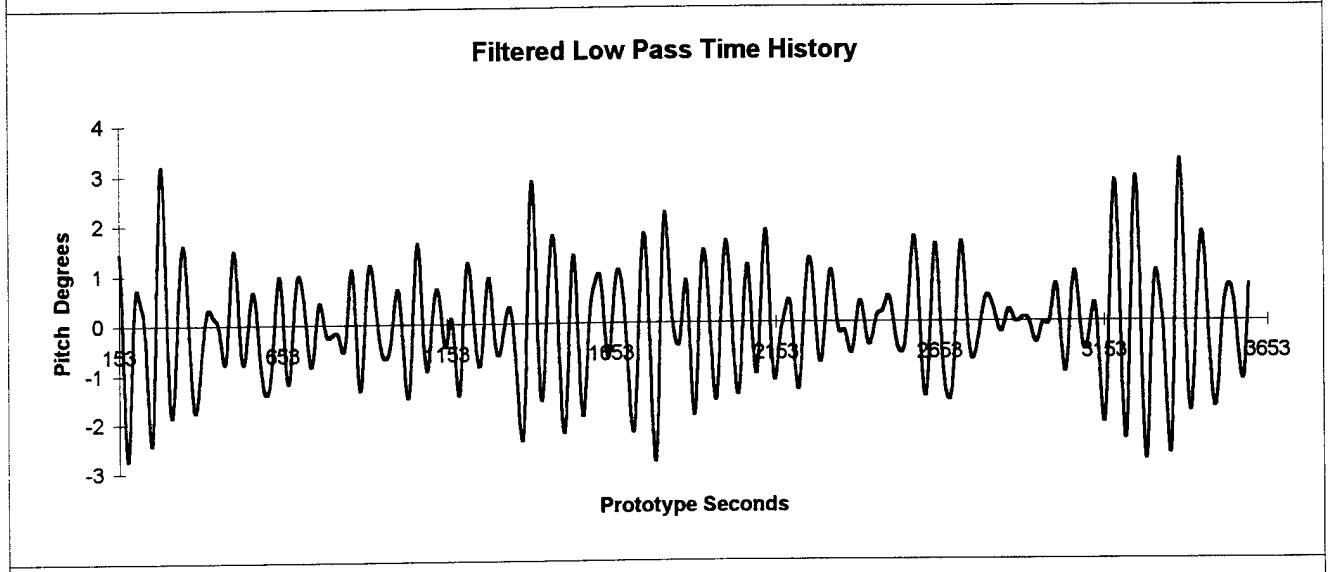

Unfiltered Time History
300
200
100
0
-100
-200
-300
Buoy-1 Kips
3583
Prototype Seconds

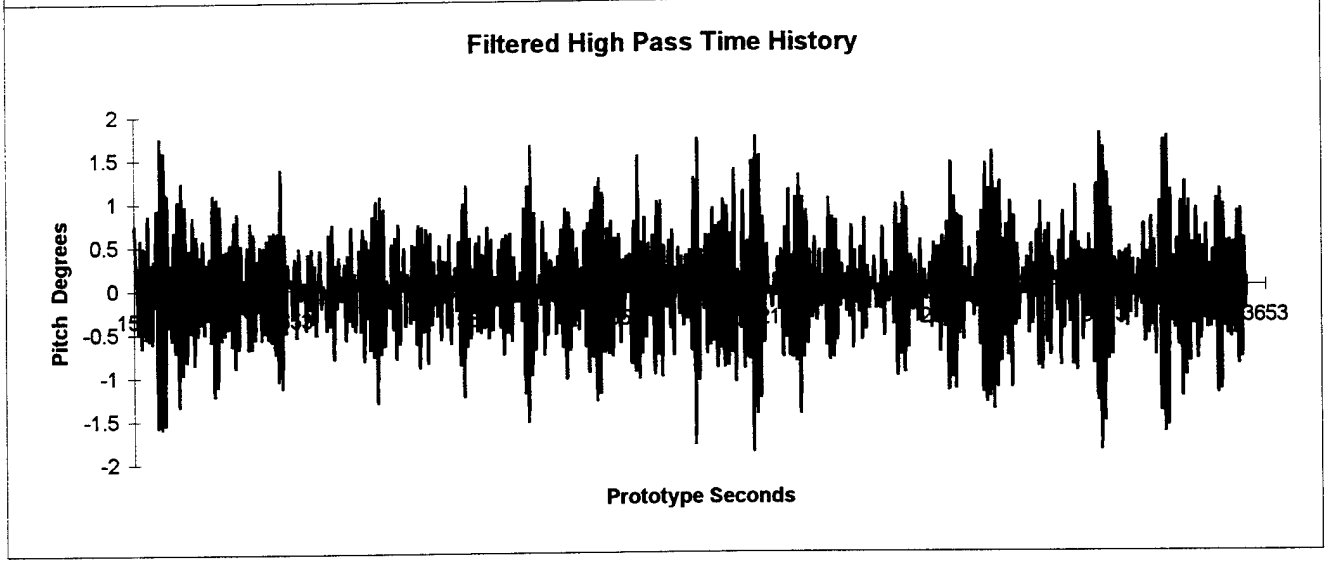

Filtered Low Pass Time History
250
200
150
100
50
0
-50
-100
-150
-200
-250
-300
Buoy-1 Kips
3583
Prototype Seconds

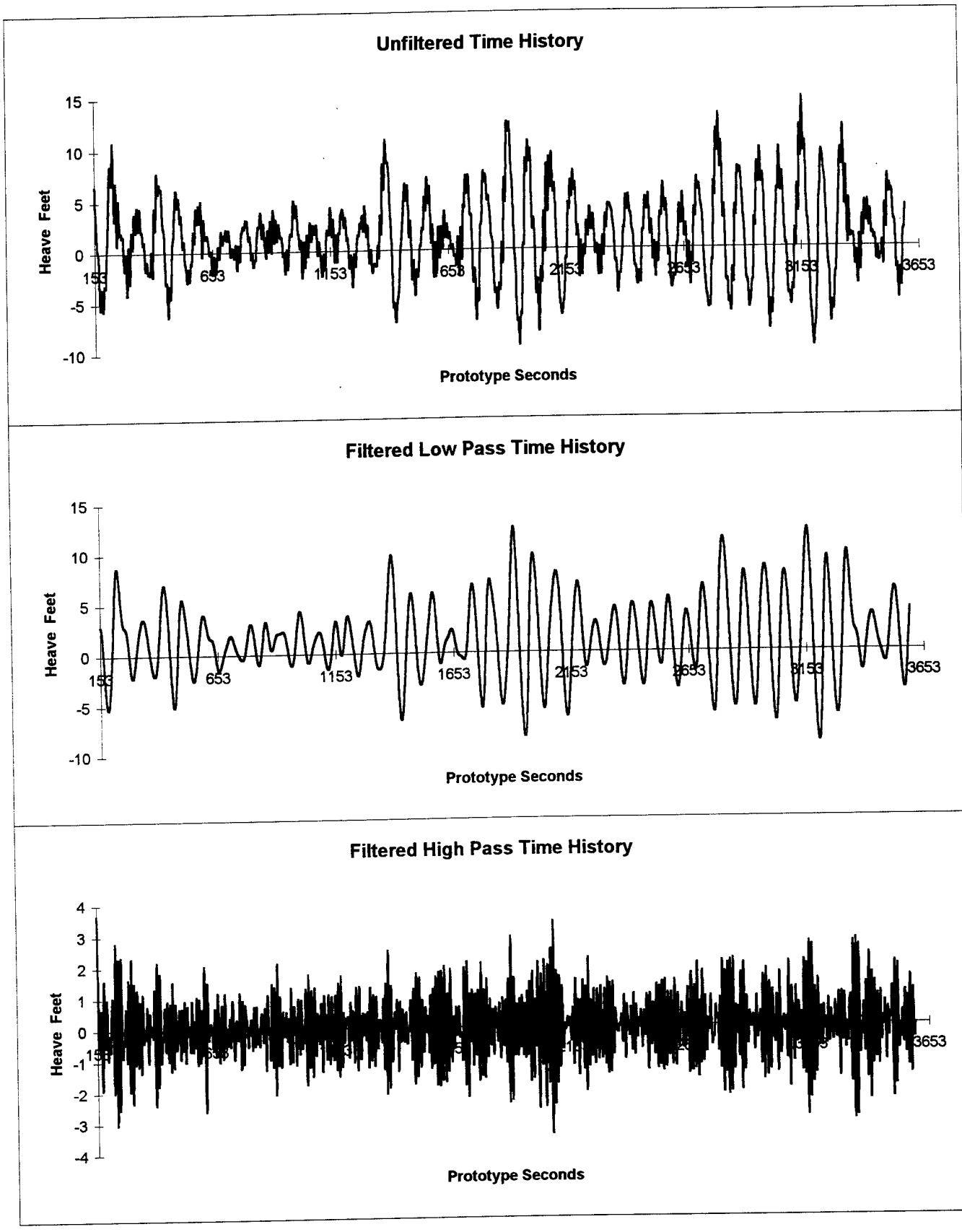

Filtered High Pass Time History
150
100
50
0
-50
-100
-150
Buoy-1 Kips
3583
Prototype Seconds

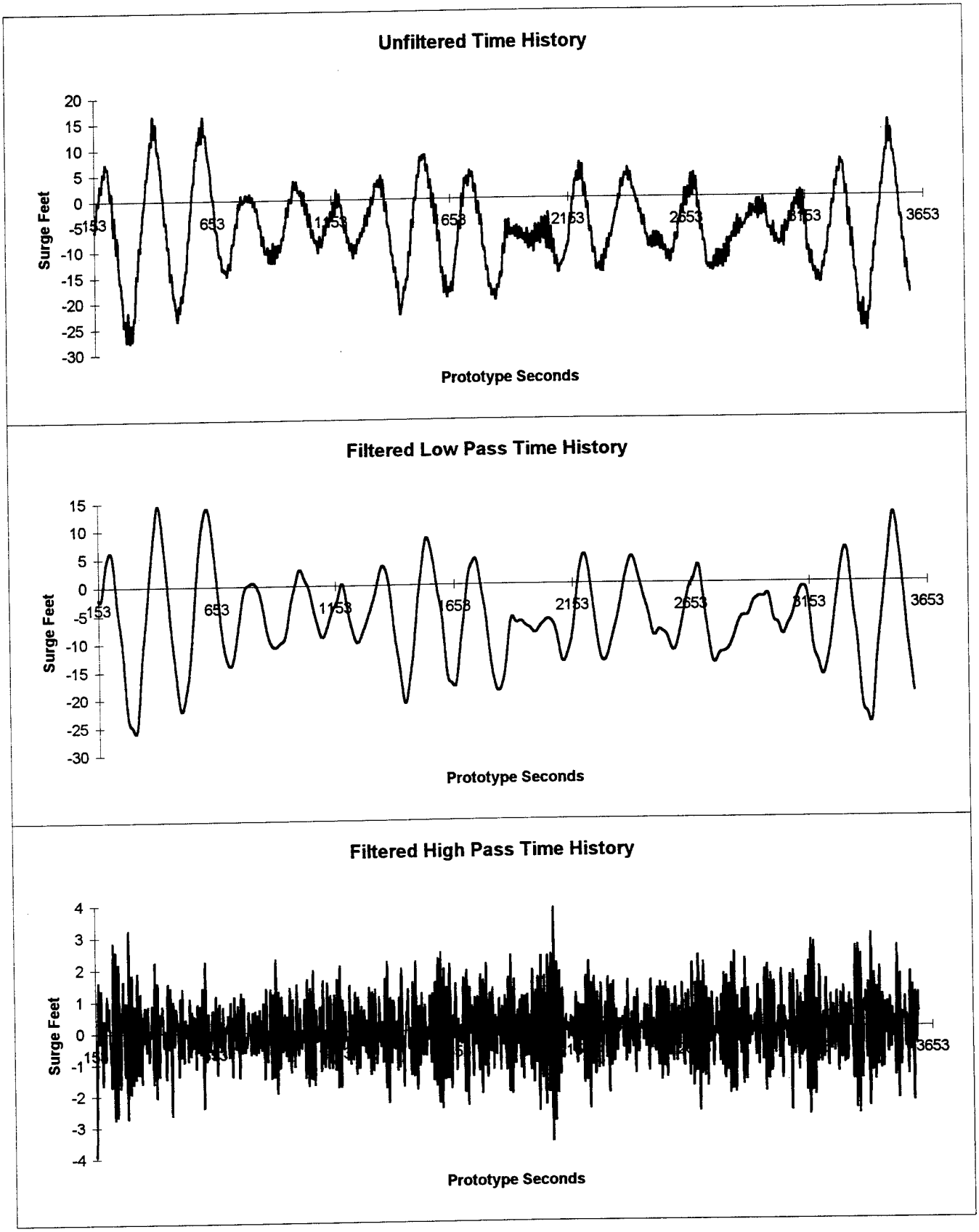

Unfiltered Time History
Buoy-2 Kips
1000
800
600
400
200
0
-200
-400
83
583
1083
1583
2083
2583
3083
3583
Prototype Seconds
Filtered Low Pass Time History
Buoy-2 Kips
1000
800
600
400
200
0
-200
83
583
1083
1583
2083
2583
3083
3583
Prototype Seconds
Filtered High Pass Time History
Buoy-2 Kips
400
300
200
100
0
-100
-200
-300
83
583
1083
1583
2083
3083
3583
Prototype Seconds

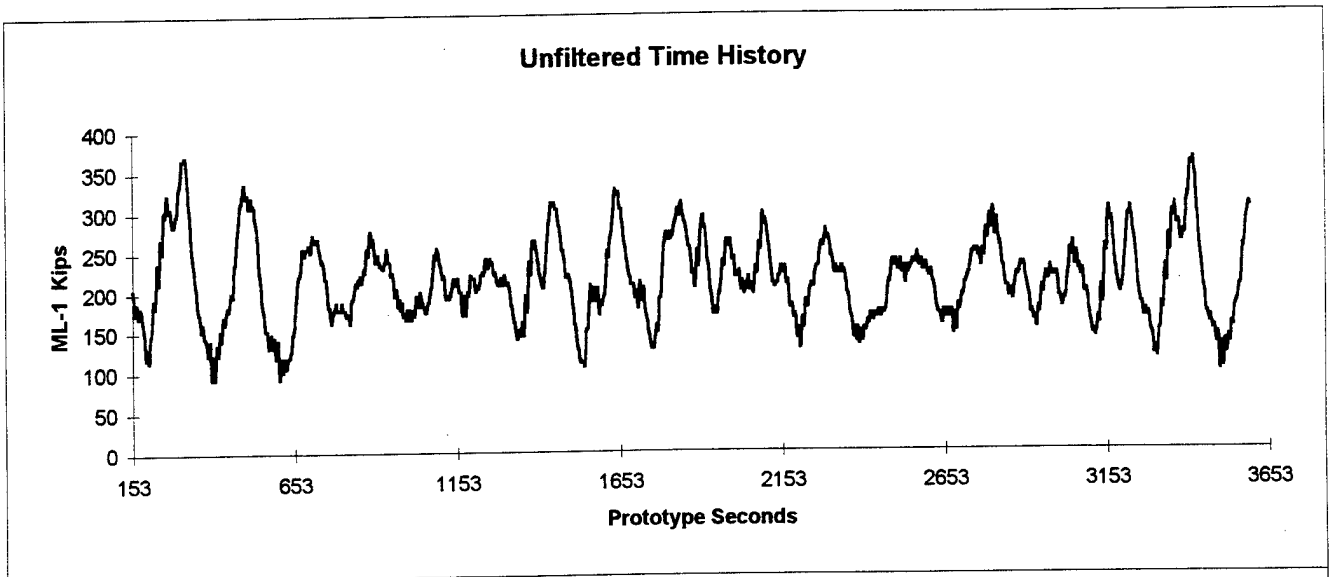

Unfiltered Time History
Pitch Degrees
4
3
2
1
0
-1
-2
-3
-4
-5
3653
Prototype Seconds

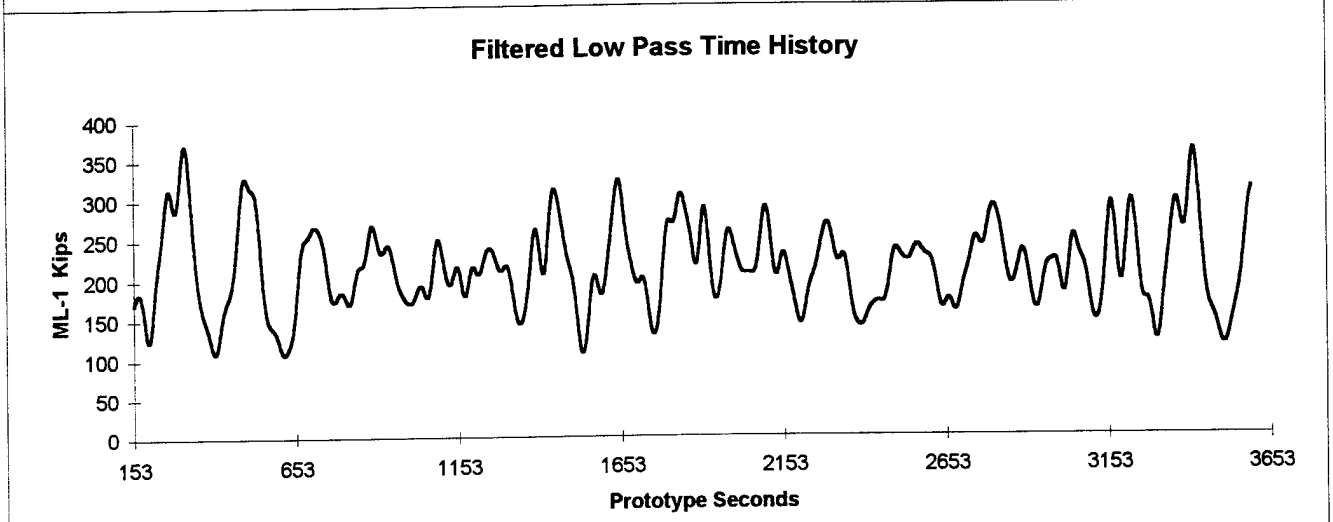

Filtered Low Pass Time History
Pitch Degrees
4
3
2
1
0
-1
-2
-3
153
1653
2153
3653
Prototype Seconds

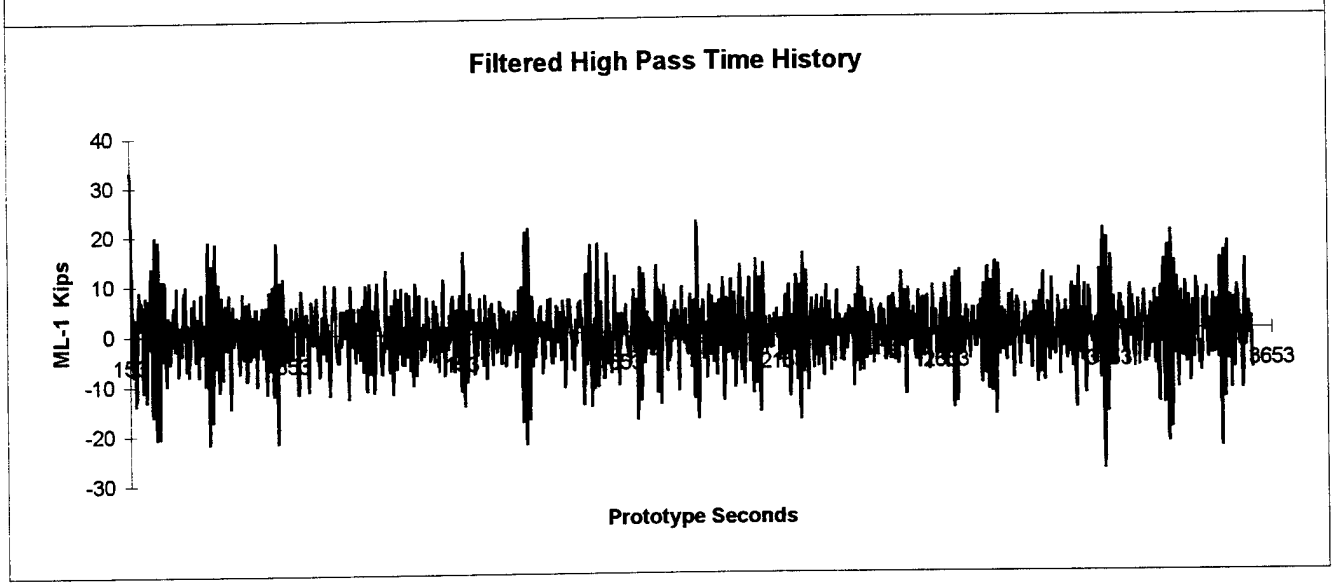

Filtered High Pass Time History
Pitch Degrees
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
3653
Prototype Seconds

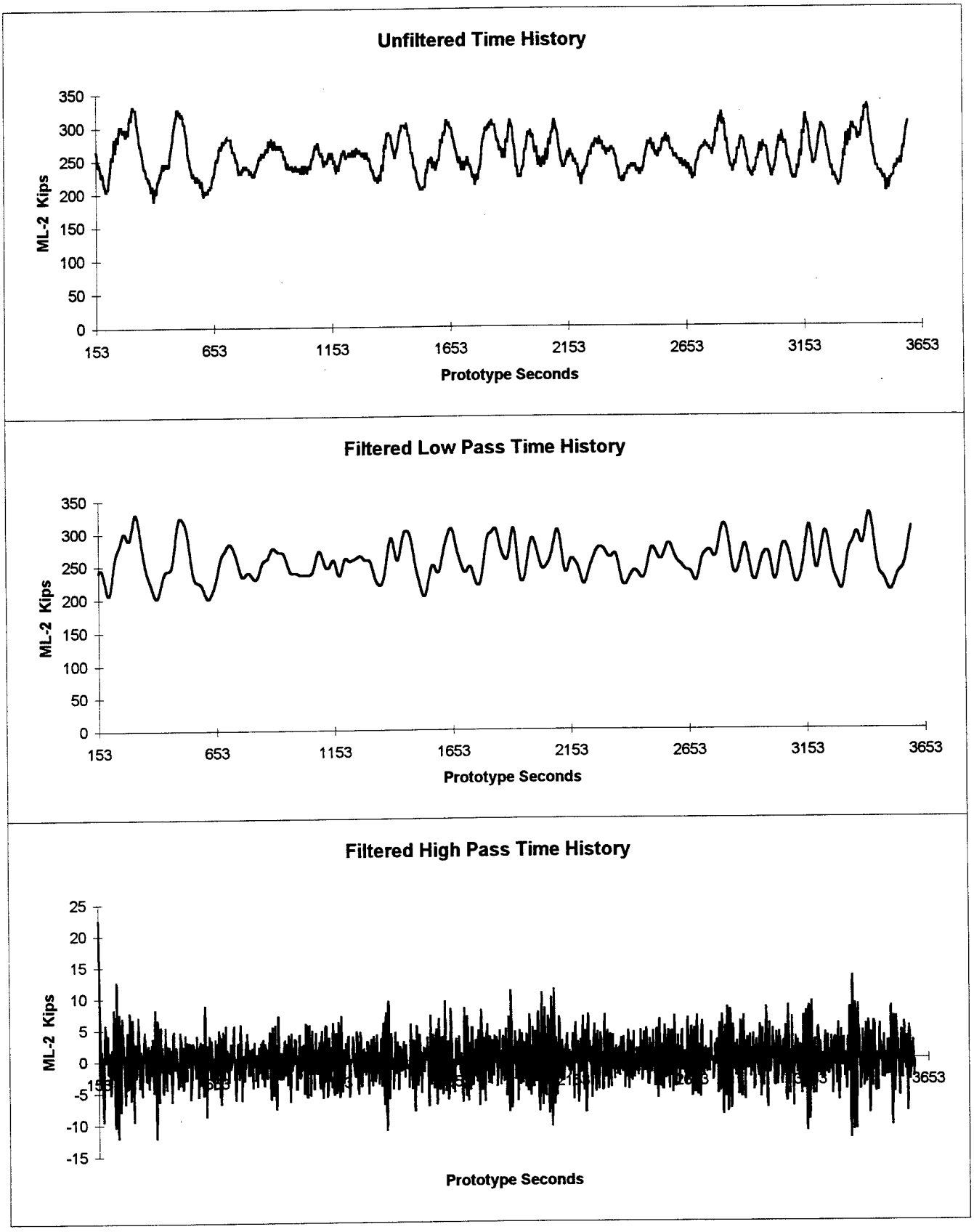

Unfiltered Time History
Heave Feet
15
10
5
0
-5
-10
153
653
1153
1653
2153
2653
3153
3653
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
15
10
5
0
-5
-10
153
653
1153
1653
2153
2653
3153
3653
Prototype Seconds
Filtered High Pass Time History
Heave Feet
4
3
2
1
0
-1
-2
-3
-4
3653
Prototype Seconds

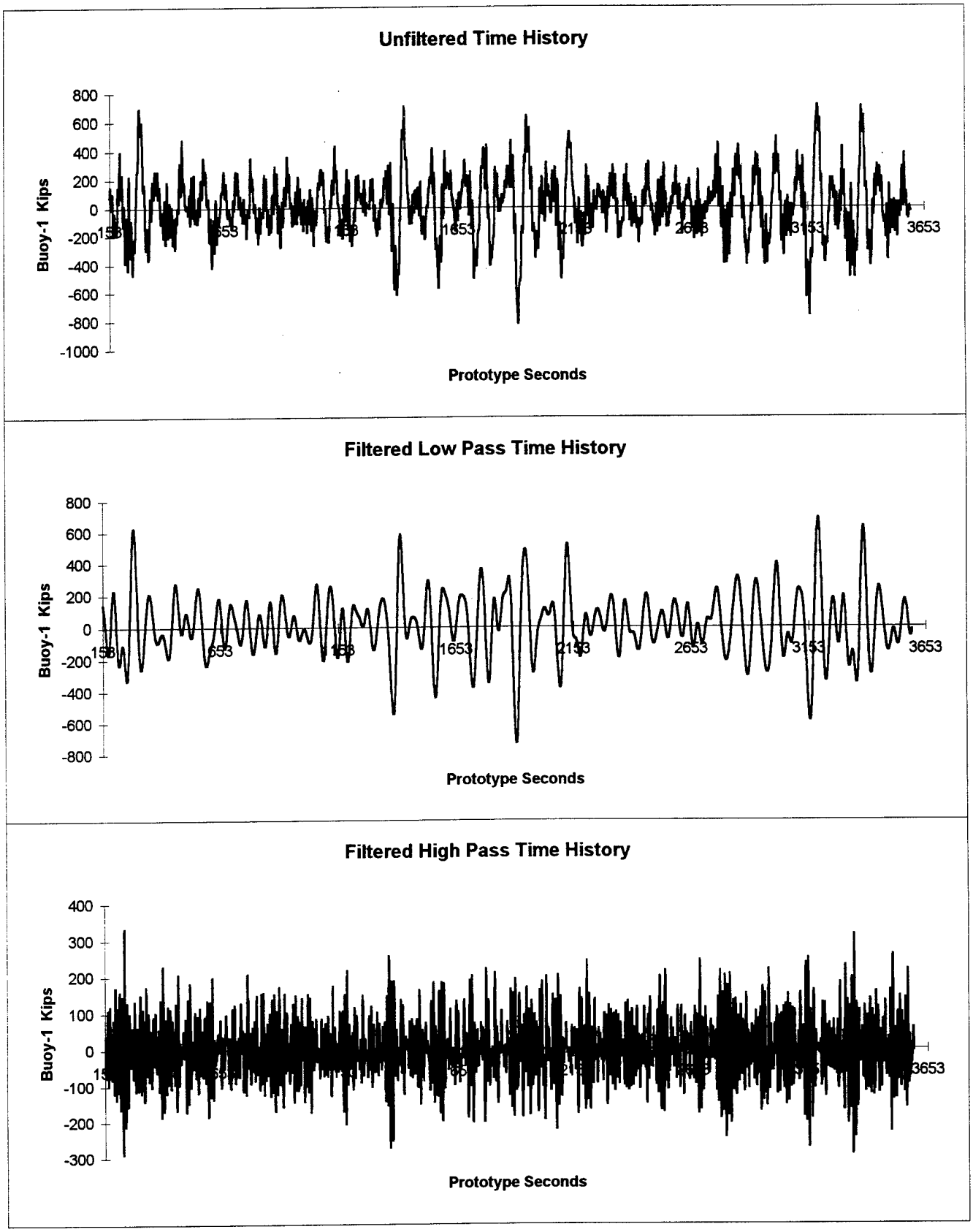

Unfiltered Time History
Surge Feet
20
15
10
5
0
-5
-10
-15
-20
-25
-30
153
653
1153
1653
2153
2653
3153
3653
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
15
10
5
0
-5
-10
-15
-20
-25
-30
153
653
1153
1653
2153
2653
3153
3653
Prototype Seconds
Filtered High Pass Time History
Surge Feet
4
3
2
1
0
-1
-2
-3
-4
3653
Prototype Seconds

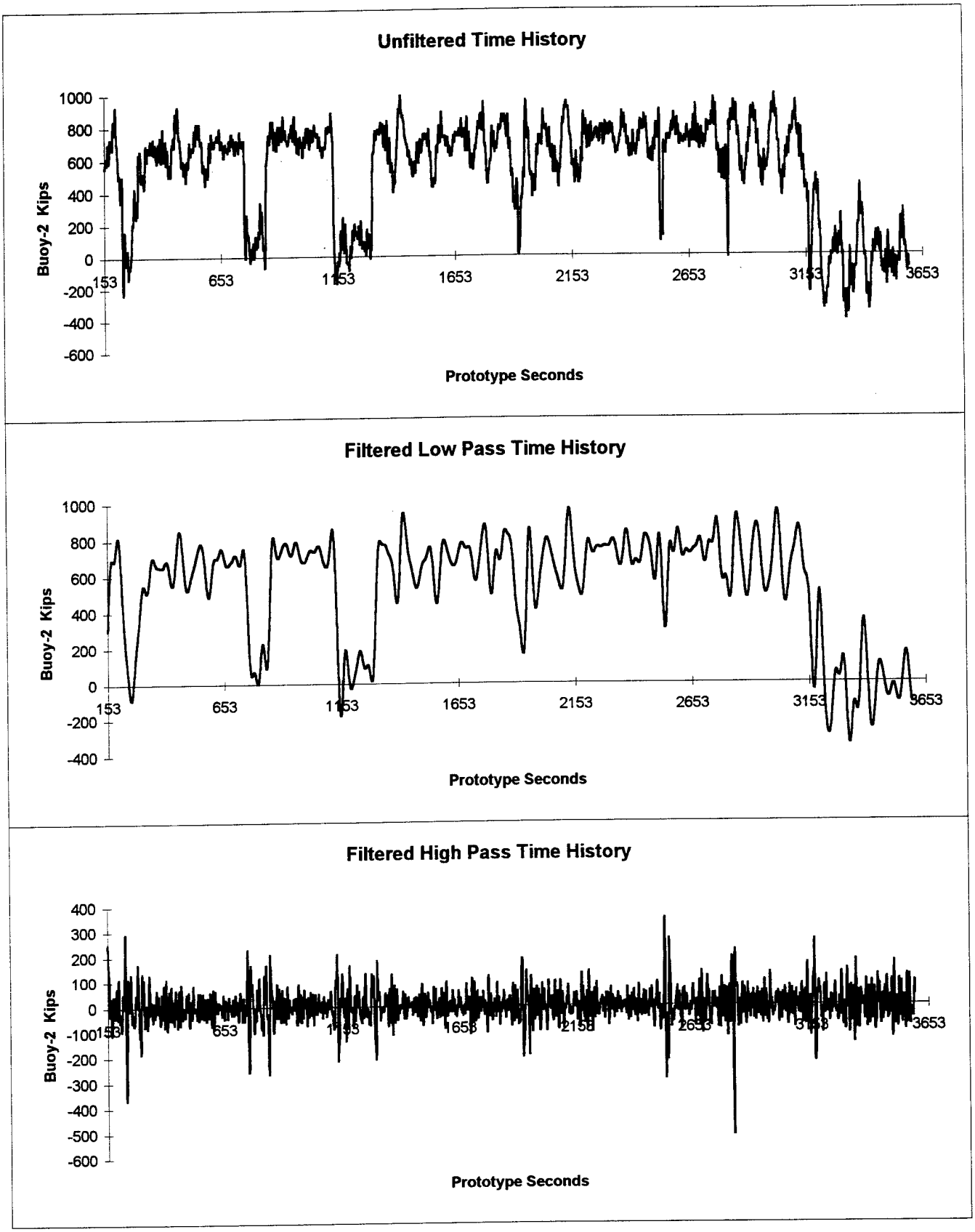

Unfiltered Time History
ML-1 Kips
400
350
300
250
200
150
100
50
0
153
653
1153
1653
2153
2653
3153
3653
Prototype Seconds

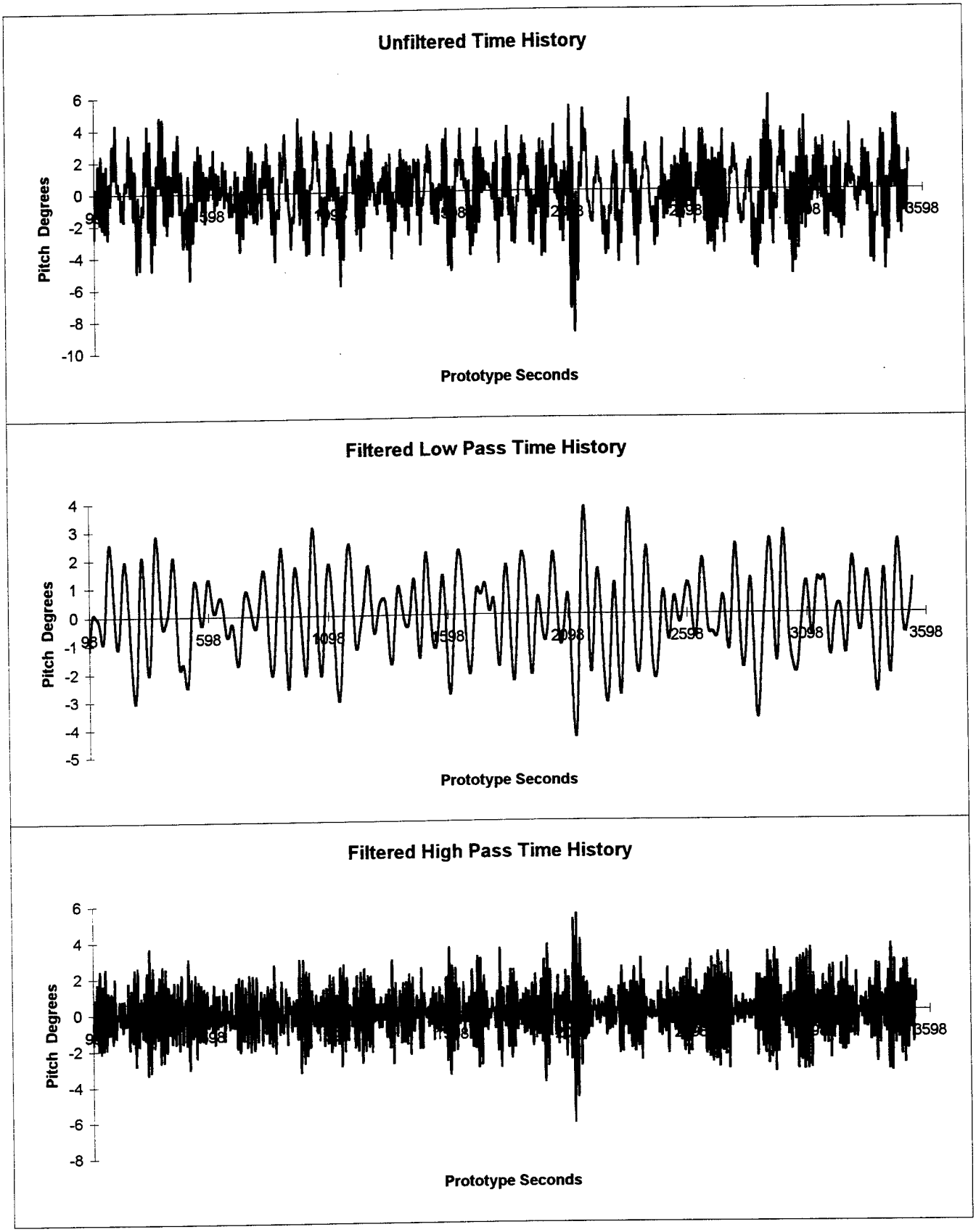

Filtered Low Pass Time History
ML-1 Kips
400
350
300
250
200
150
100
50
0
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653
1153
1653
2153
2653
3153
3653
Prototype Seconds

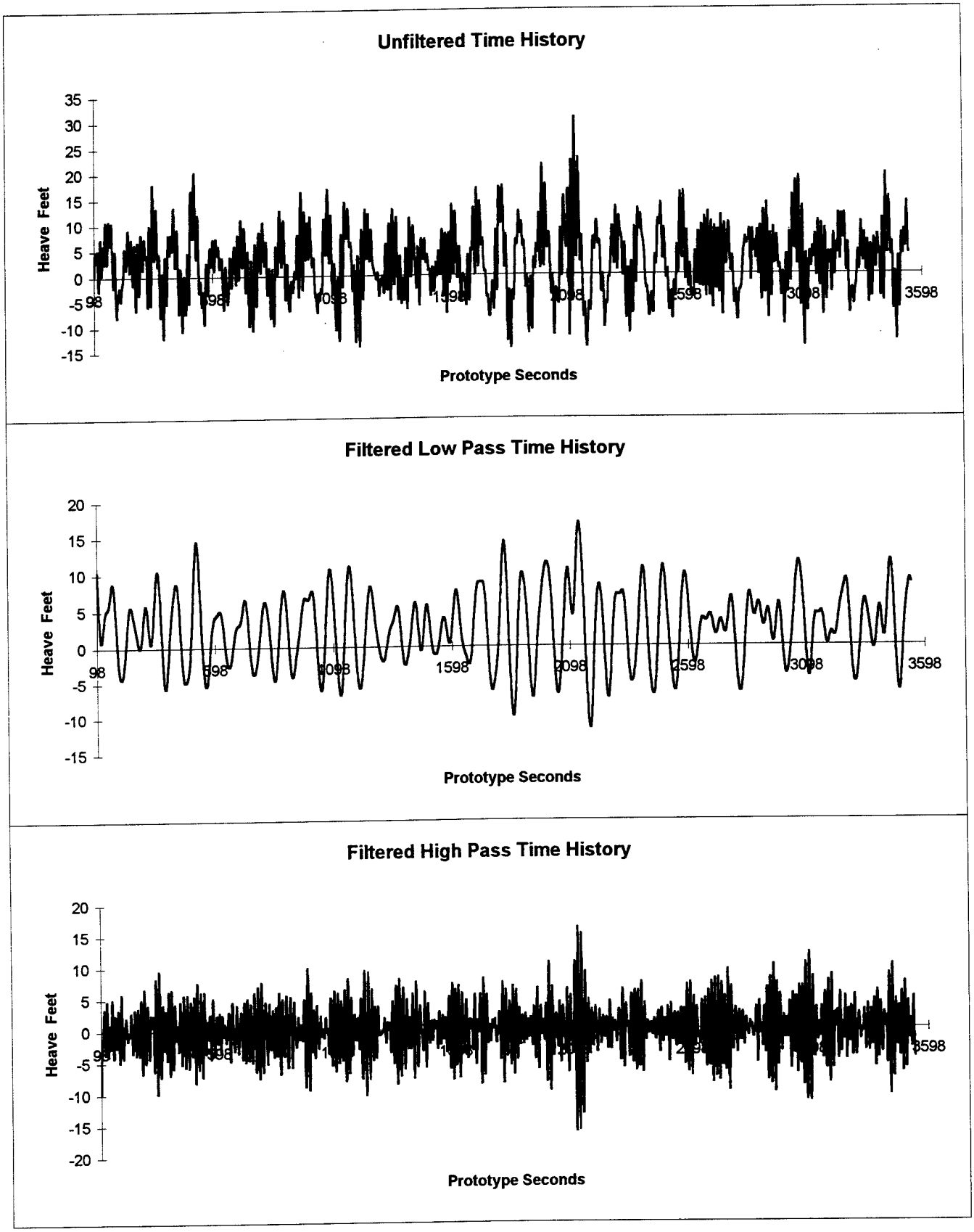

Filtered High Pass Time History
ML-1 Kips
40
30
20
10
0
-10
-20
-30
3653
Prototype Seconds

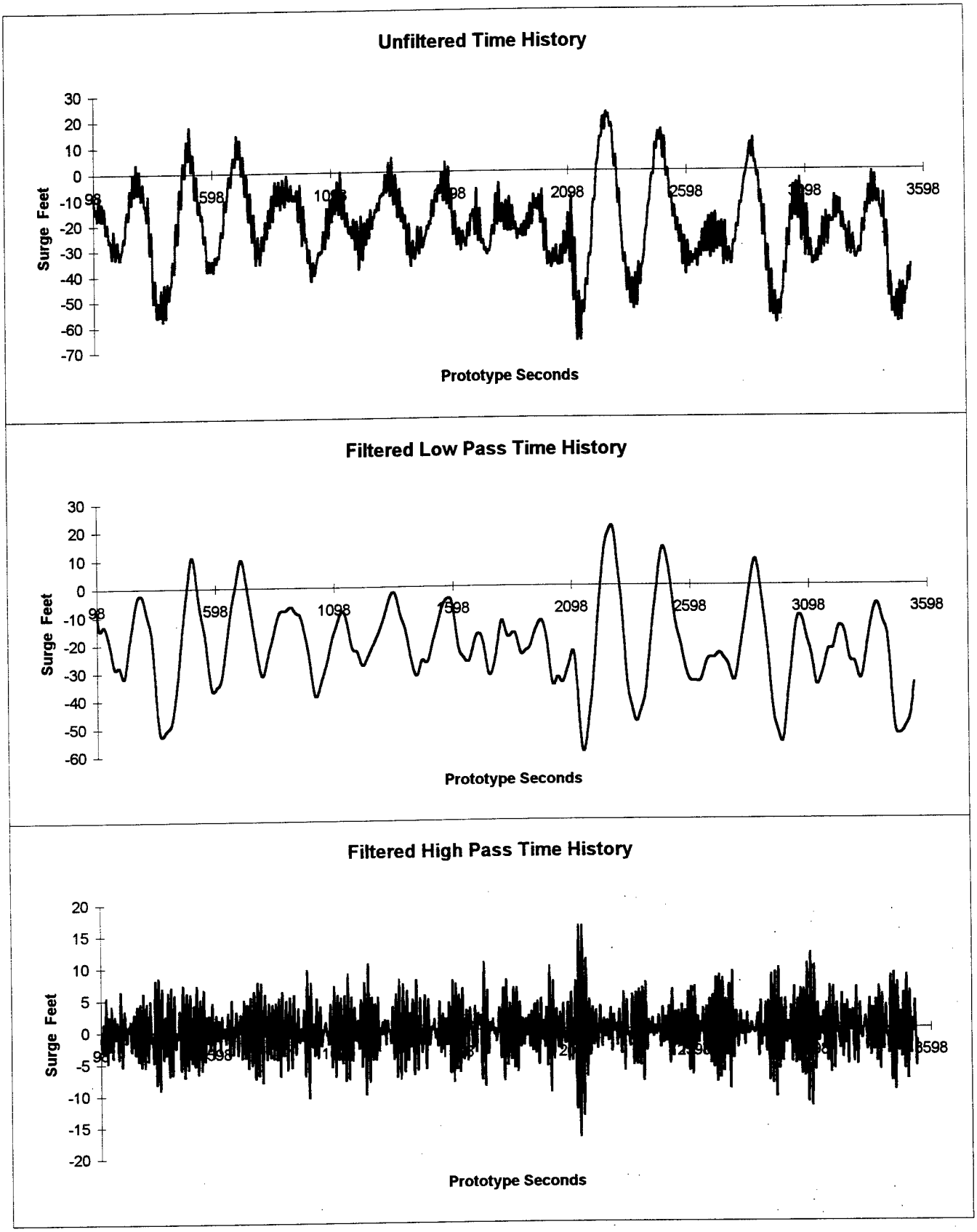

Unfiltered Time History
ML-2 Kips
350
300
250
200
150
100
50
0
153
653
1153
1653
2153
2653
3153
3653
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
350
300
250
200
150
100
50
0
153
653
1153
1653
2153
2653
3153
3653
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
25
20
15
10
5
0
-5
-10
-15
3653
Prototype Seconds

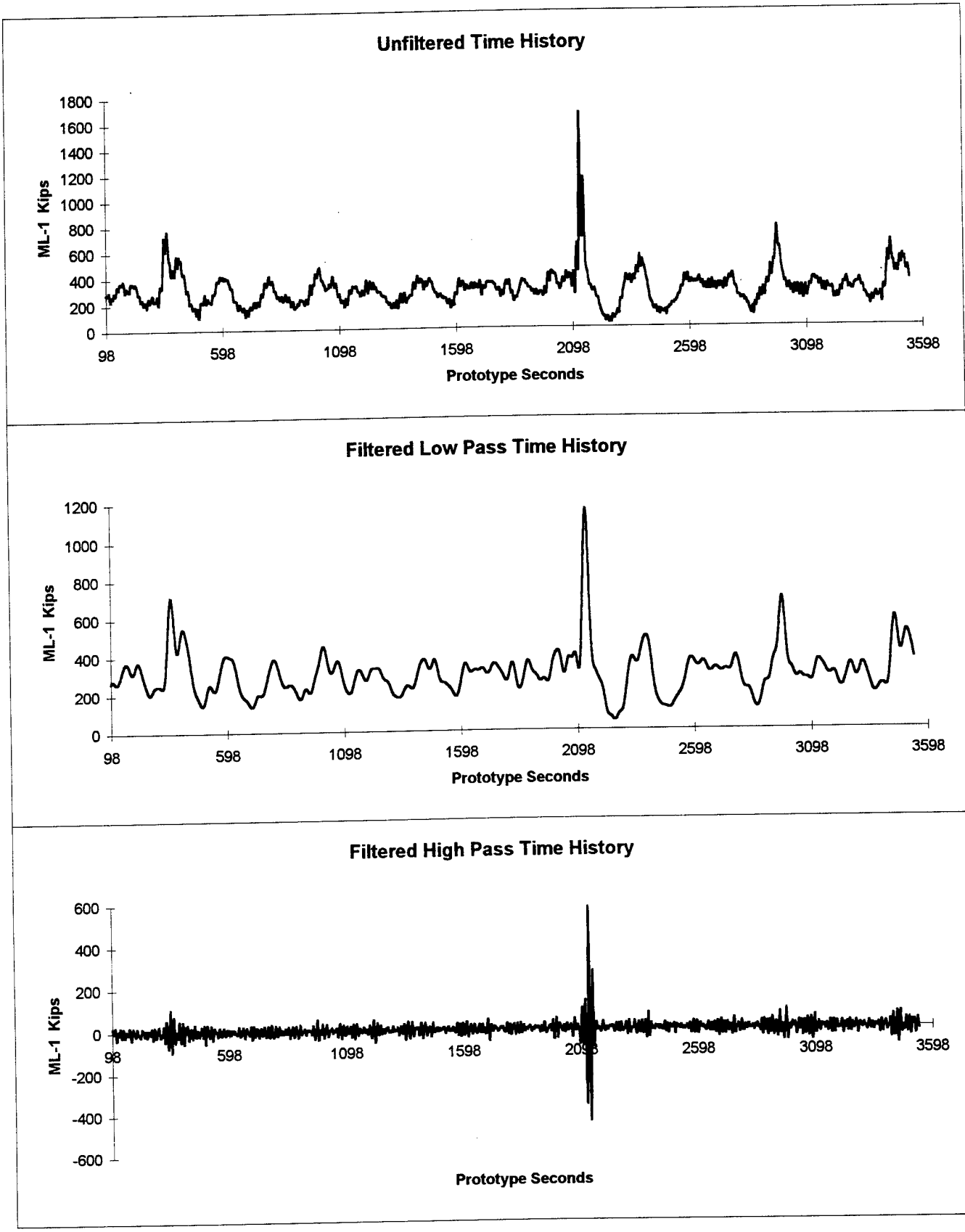

Unfiltered Time History
800
600
400
200
0
-200
-400
-600
-800
-1000
Buoy-1 Kips
3653
Prototype Seconds
Filtered Low Pass Time History
800
600
400
200
0
-200
-400
-600
-800
Buoy-1 Kips
1653
2653
3653
Prototype Seconds
Filtered High Pass Time History
400
300
200
100
0
-100
-200
-300
Buoy-1 Kips
3653
Prototype Seconds

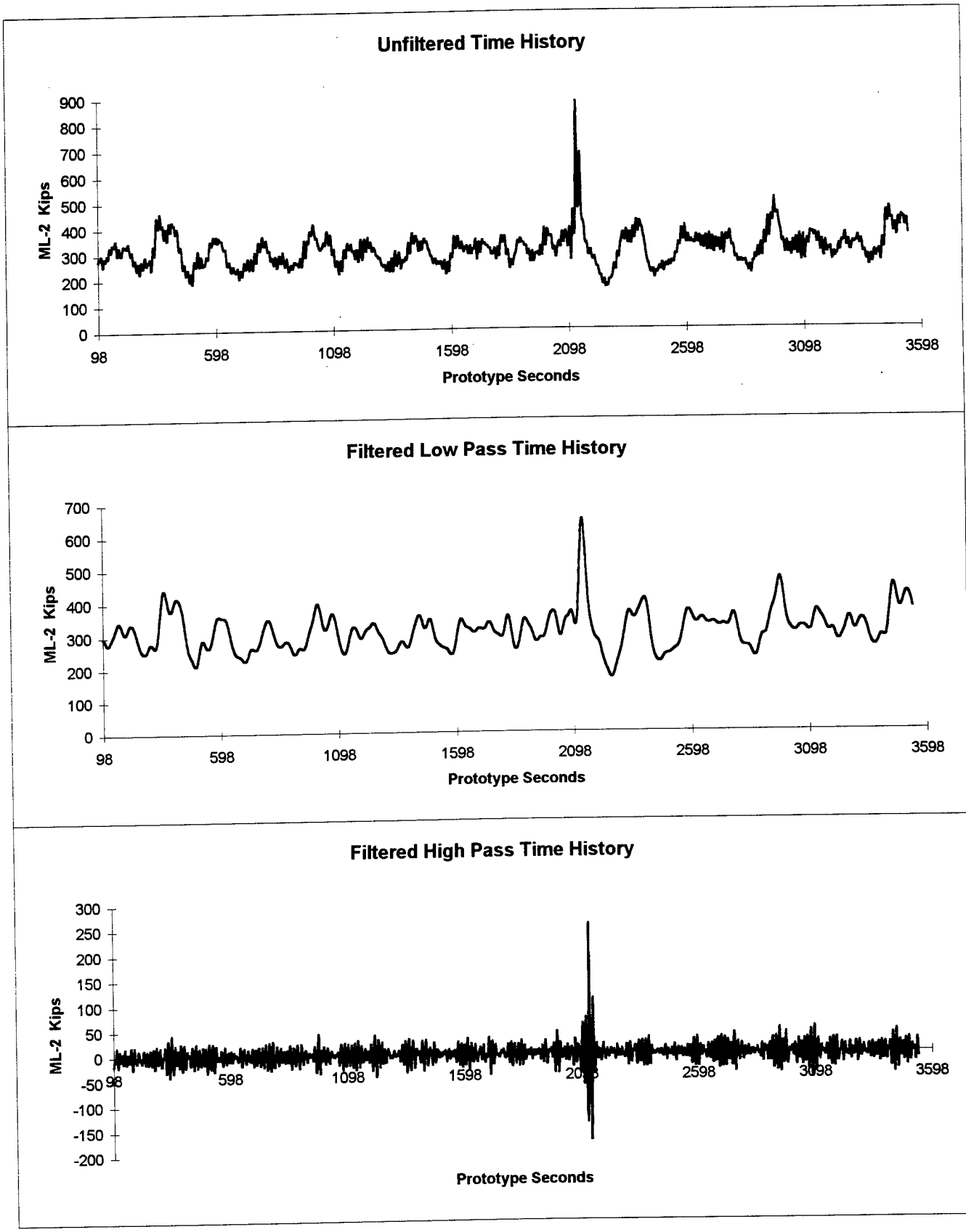

Unfiltered Time History
Buoy-2 Kips
1000
800
600
400
200
0
-200
-400
-600
153
653
1153
1653
2153
2653
3153
3653
Prototype Seconds
Filtered Low Pass Time History
Buoy-2 Kips
1000
800
600
400
200
0
-200
-400
153
653
1153
1653
2153
2653
3153
3653
Prototype Seconds
Filtered High Pass Time History
Buoy-2 Kips
400
300
200
100
0
-100
-200
-300
-400
-500
-600
153
653
1153
1653
2153
2653
3153
3653
Prototype Seconds

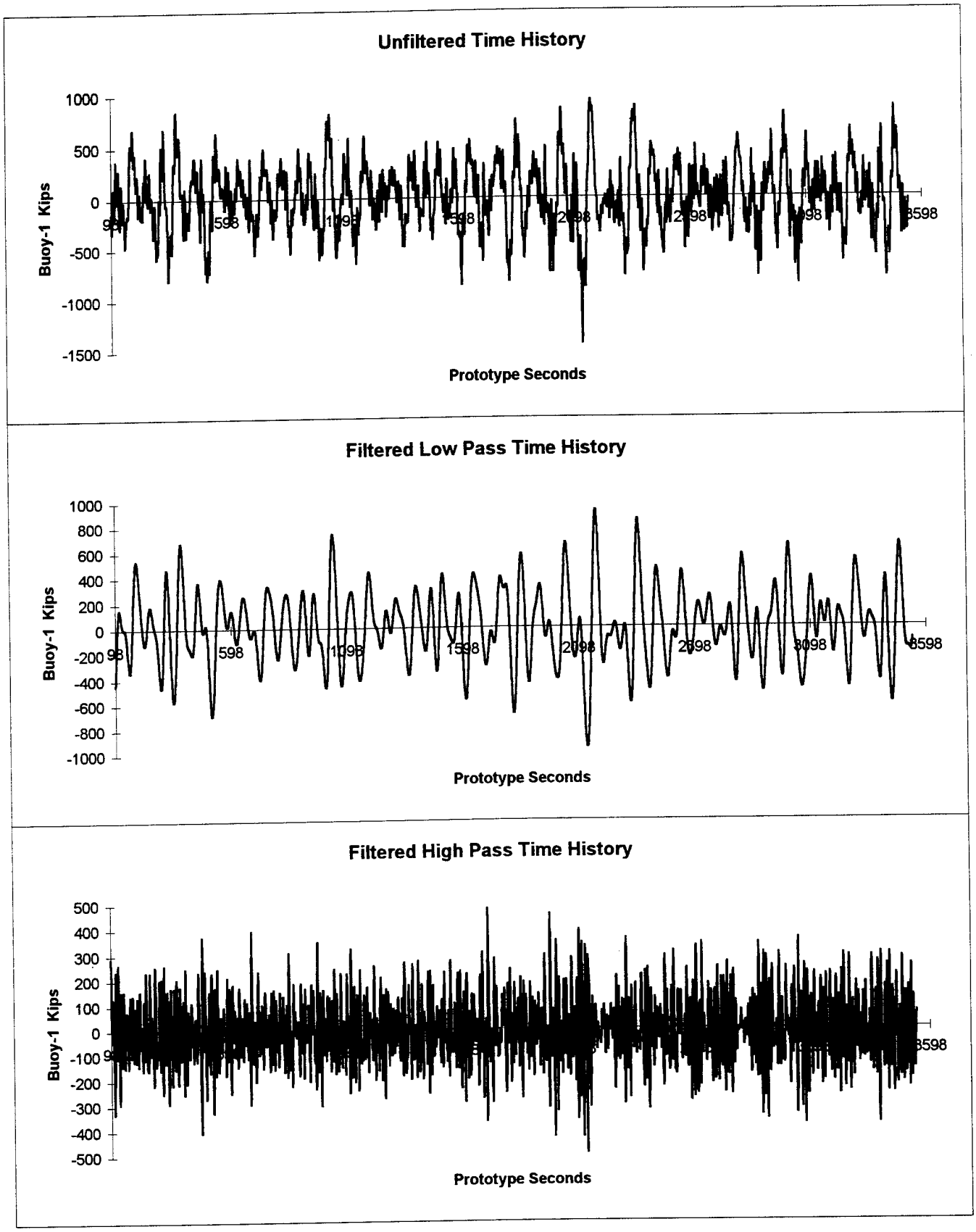

Unfiltered Time History
Pitch Degrees
6
4
2
0
-2
-4
-6
-8
-10
598
3598
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
4
3
2
1
0
-1
-2
-3
-4
-5
598
1098
1598
2098
2598
3098
3598
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
6
4
2
0
-2
-4
-6
-8
3598
Prototype Seconds

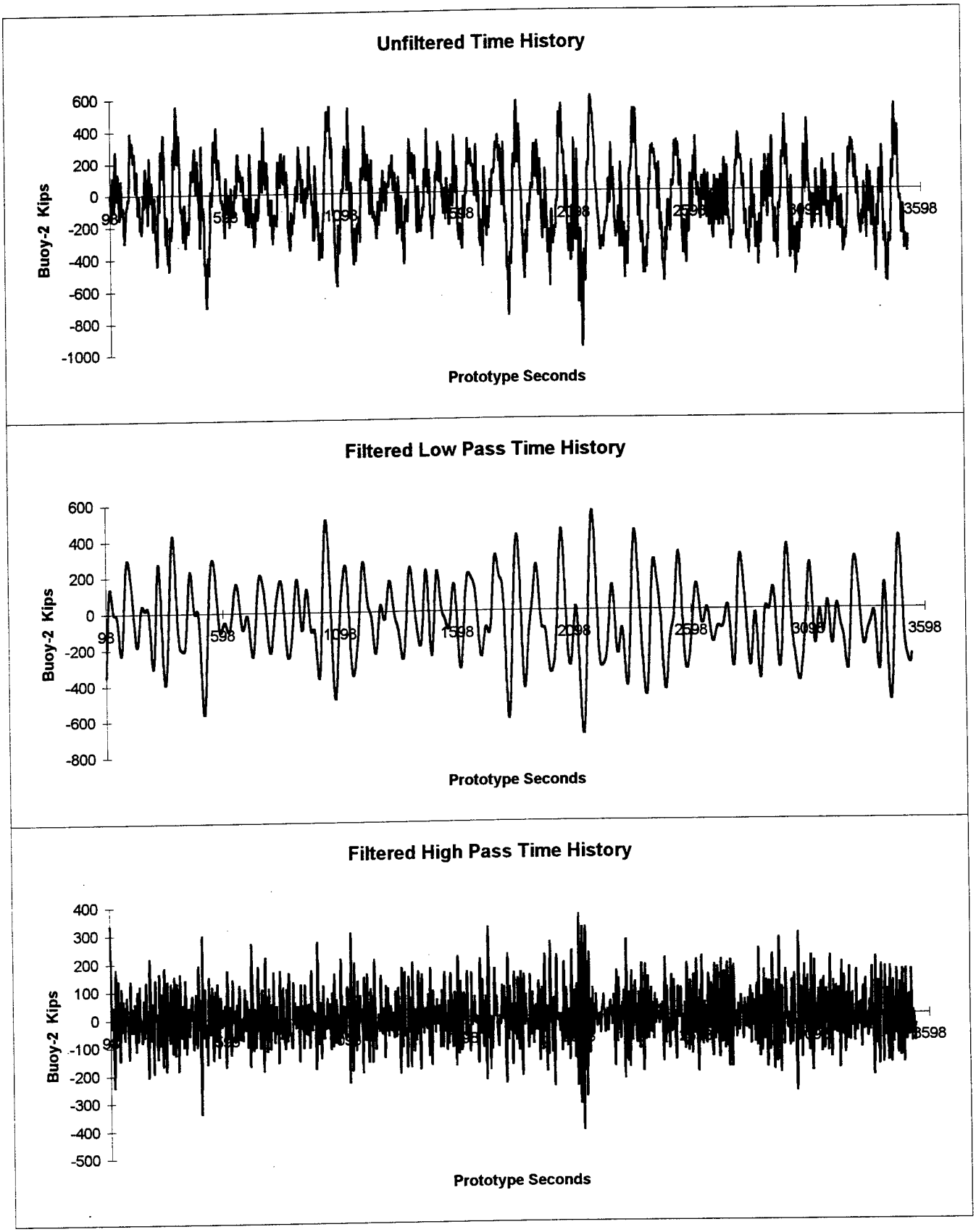

Unfiltered Time History
Heave Feet
35
30
25
20
15
10
5
0
-5
-10
-15
98
598
1598
2098
2598
3098
3598
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
20
15
10
5
0
-5
-10
-15
98
598
1598
2098
2598
3098
3598
Prototype Seconds
Filtered High Pass Time History
Heave Feet
20
15
10
5
0
-5
-10
-15
-20
3598
Prototype Seconds

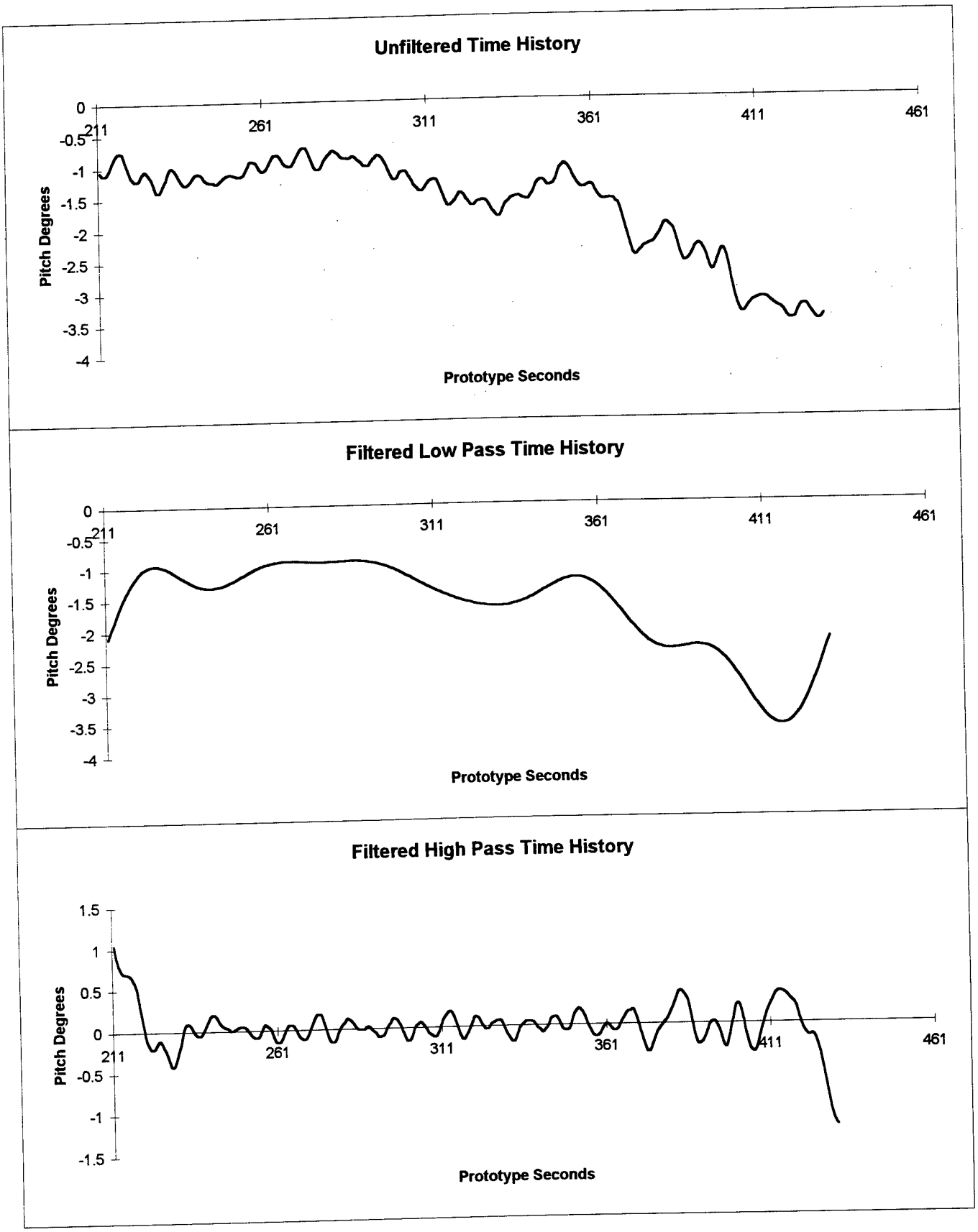

Unfiltered Time History
Surge Feet
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
598
2098
2598
3598
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
30
20
10
0
-10
-20
-30
-40
-50
-60
598
1098
2098
2598
3098
3598
Prototype Seconds
Filtered High Pass Time History
Surge Feet
20
15
10
5
0
-5
-10
-15
-20
Prototype Seconds

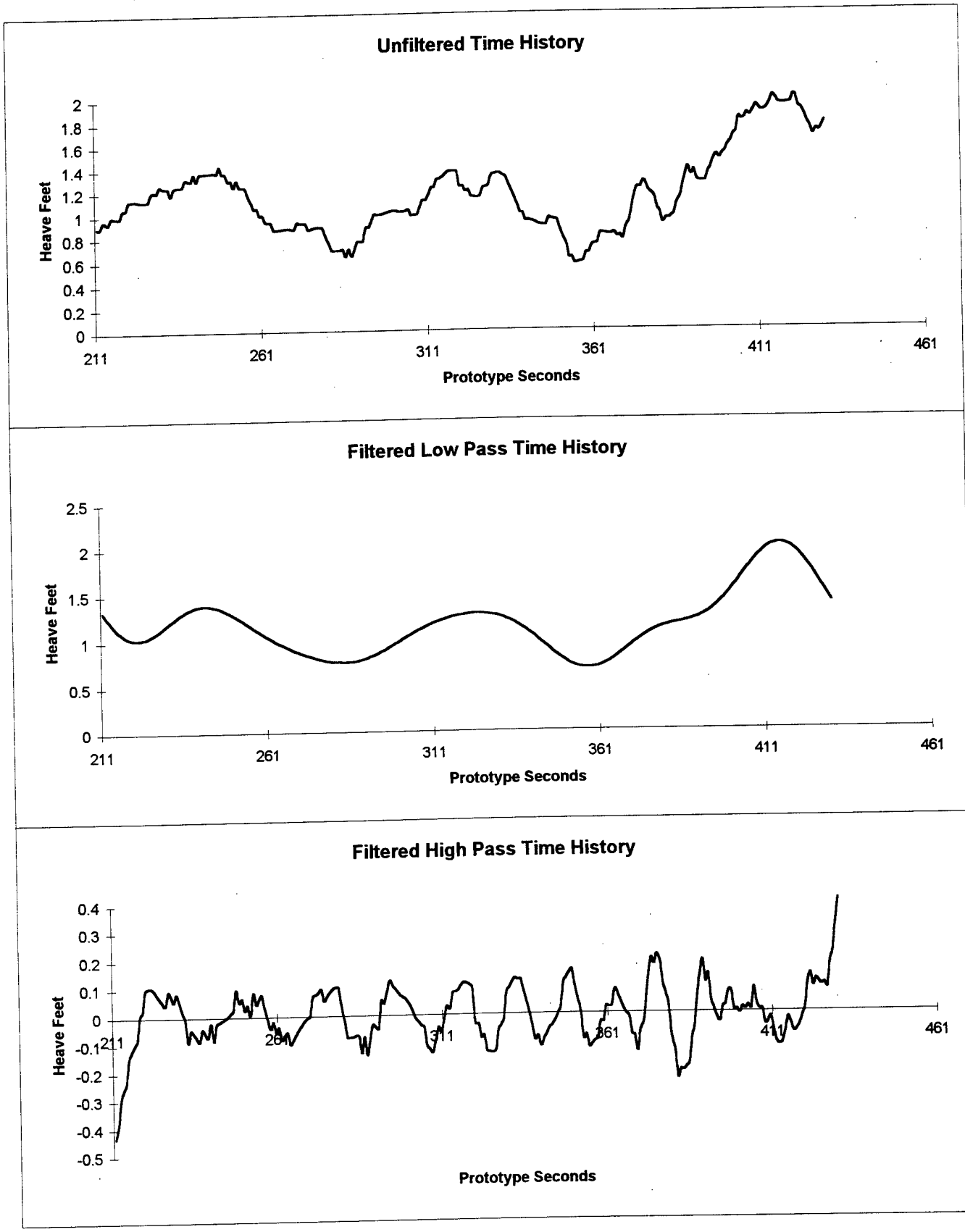

Unfiltered Time History
ML-1 Kips
1800
1600
1400
1200
1000
800
600
400
200
0
98
598
1098
1598
2098
2598
3098
3598
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
1200
1000
800
600
400
200
0
98
598
1098
1598
2098
2598
3098
3598
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
600
400
200
0
-200
-400
-600
98
598
1098
1598
2598
3098
3598
Prototype Seconds

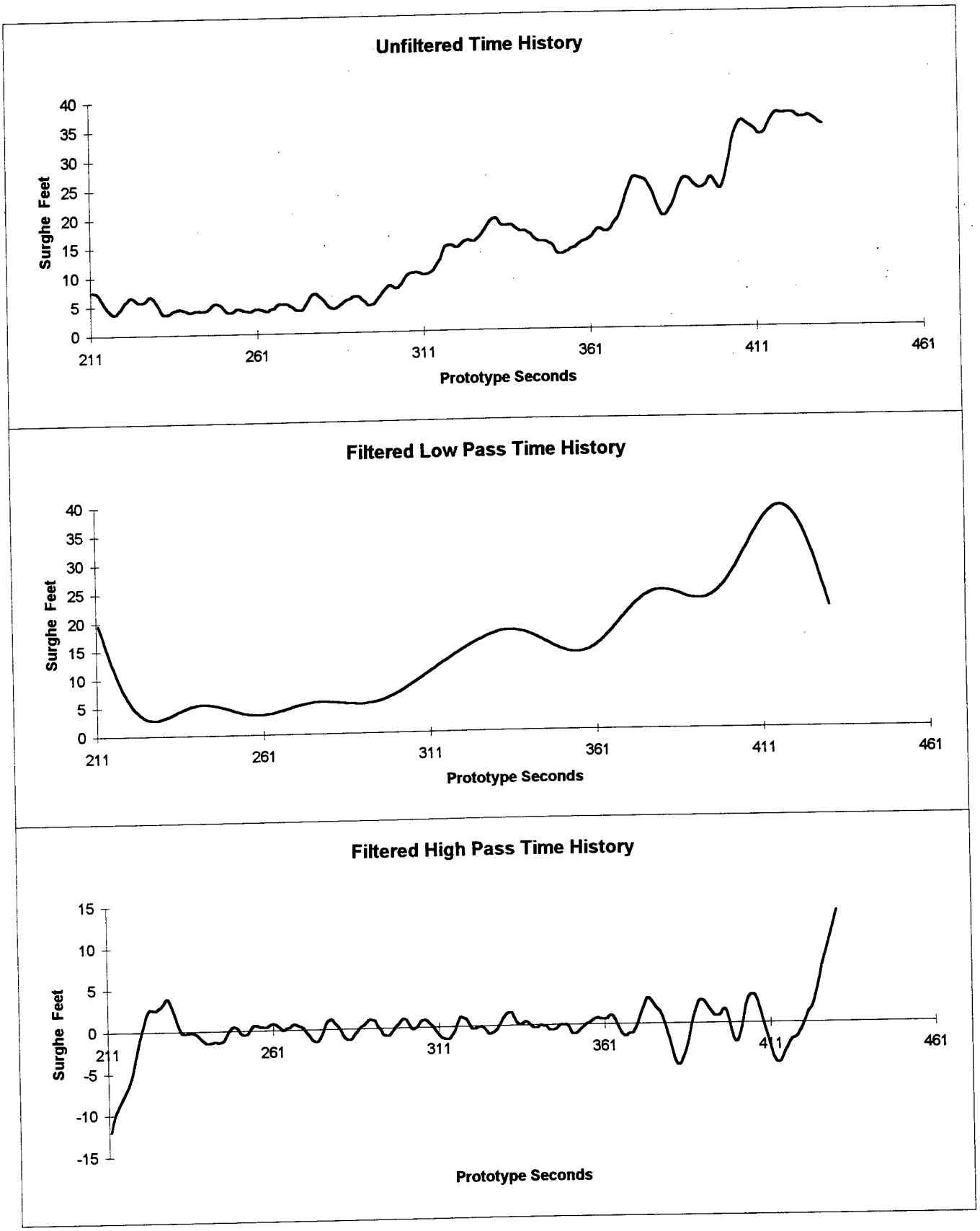

Unfiltered Time History
ML-2 Kips
900
800
700
600
500
400
300
200
100
0
98
598
1098
1598
2098
2598
3098
3598
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
700
600
500
400
300
200
100
0
98
598
1098
1598
2098
2598
3098
3598
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
300
250
200
150
100
50
0
-50
-100
-150
-200
98
598
1098
1598
2598
3598
Prototype Seconds

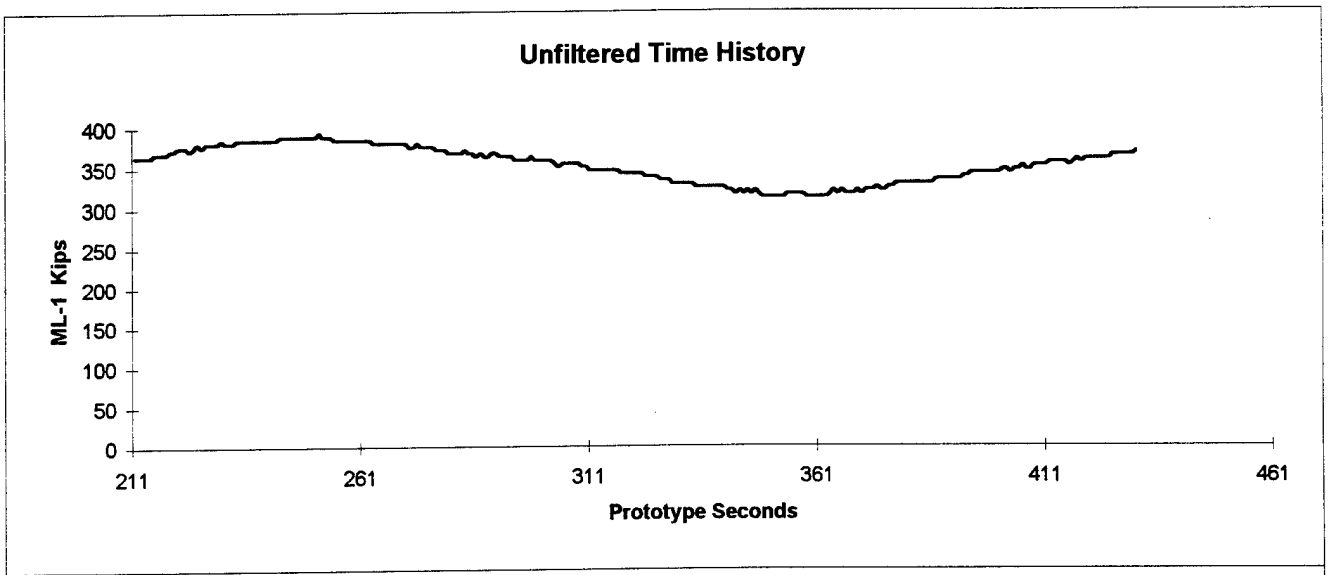

Unfiltered Time History
Buoy-1 Kips
1000
500
0
-500
-1000
-1500
598
1098
1598
2098
2598
3098
3598
Prototype Seconds
Filtered Low Pass Time History
Buoy-1 Kips
1000
800
600
400
200
0
-200
-400
-600
-800
-1000
598
1098
1598
2098
2598
3098
3598
Prototype Seconds
Filtered High Pass Time History
Buoy-1 Kips
500
400
300
200
100
0
-100
-200
-300
-400
-500
3598
Prototype Seconds

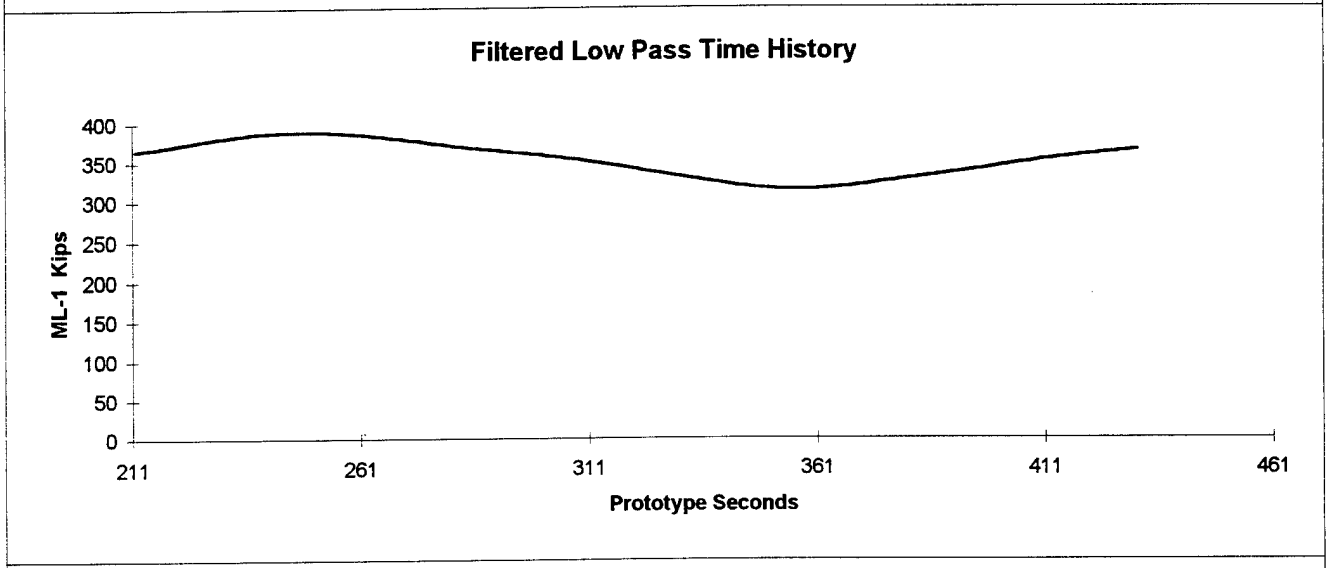

Unfiltered Time History
Buoy-2 Kips
600
400
200
0
-200
-400
-600
-800
-1000
98
598
1098
1598
2098
2598
3098
3598
Prototype Seconds
Filtered Low Pass Time History
Buoy-2 Kips
600
400
200
0
-200
-400
-600
-800
98
598
1098
1598
2098
2598
3098
3598
Prototype Seconds
Filtered High Pass Time History
Buoy-2 Kips
400
300
200
100
0
-100
-200
-300
-400
-500
3598
Prototype Seconds

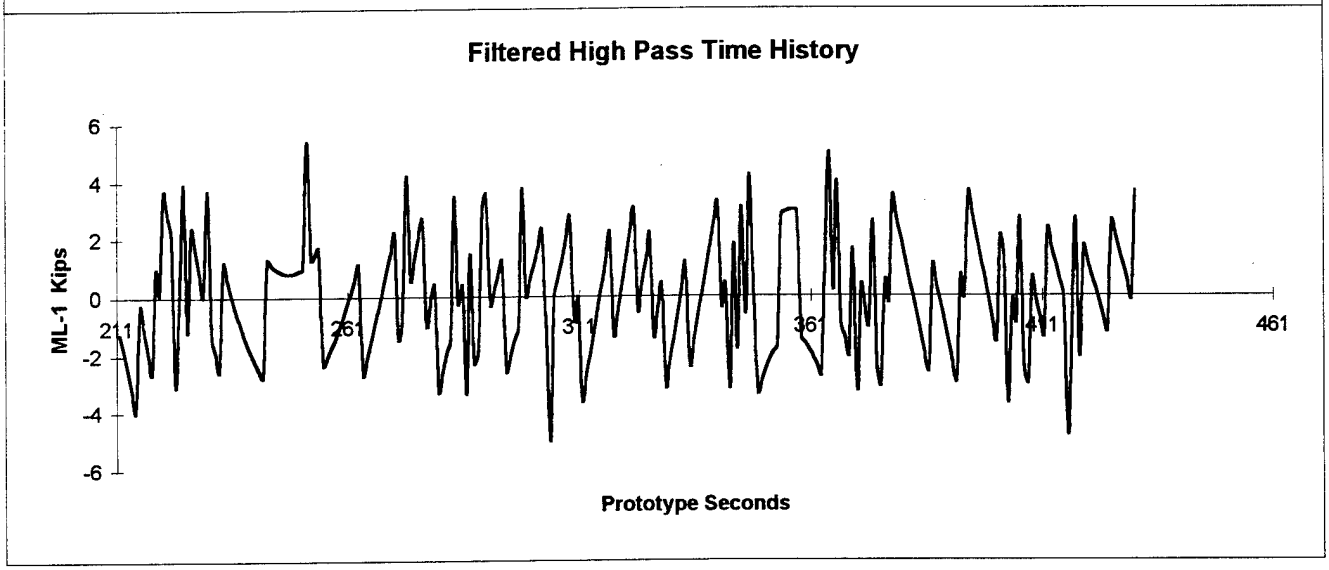

Unfiltered Time History
Pitch Degrees
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
-4
211
261
311
361
411
461
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
-4
211
261
311
361
411
461
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
211
261
311
361
411
461
Prototype Seconds

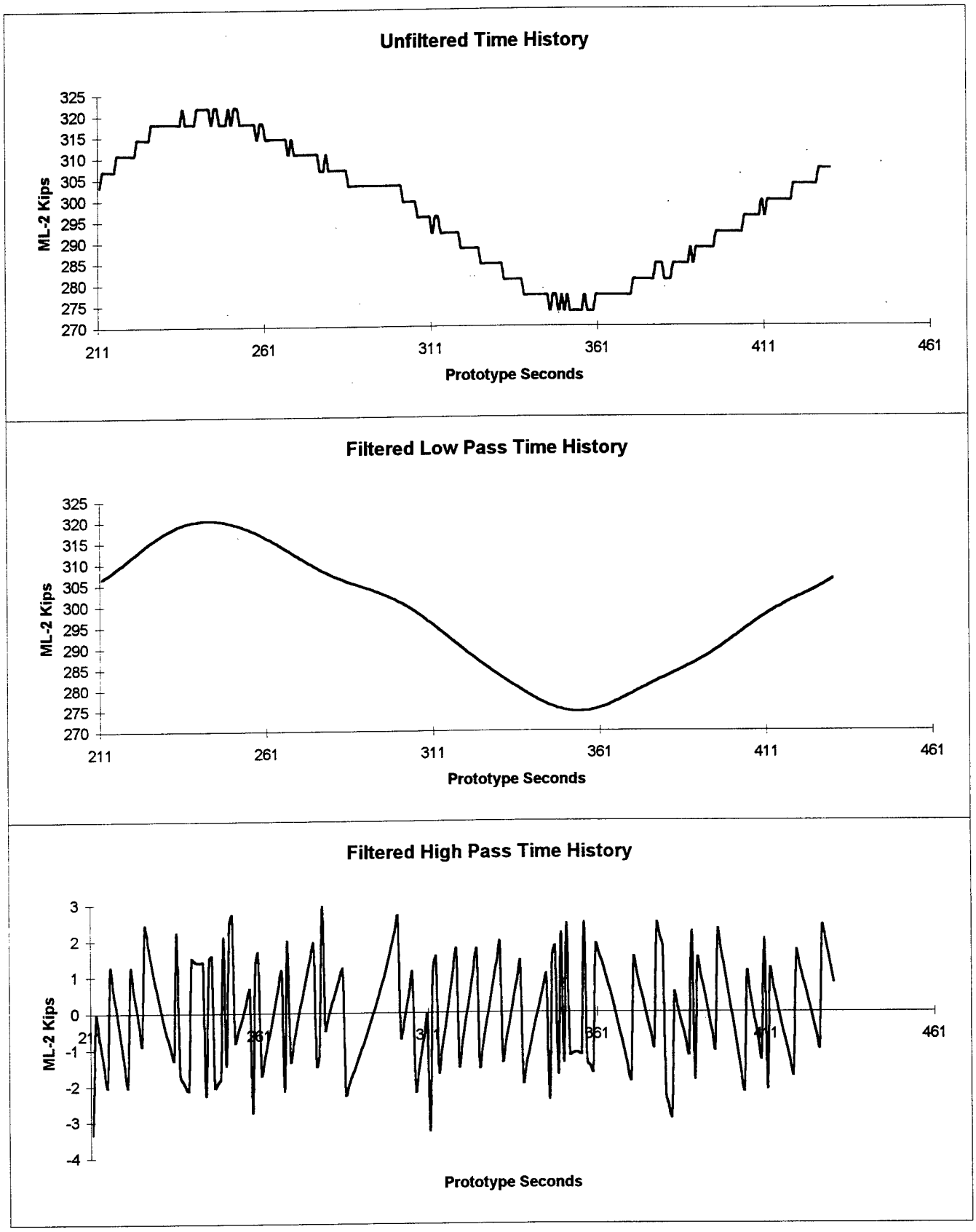

Unfiltered Time History
Heave Feet
2
1.8
1.6
1.4
1.2
1
0.8
0.6
0.4
0.2
0
211
261
311
361
411
461
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
2.5
2
1.5
1
0.5
0
211
261
311
361
411
461
Prototype Seconds
Filtered High Pass Time History
Heave Feet
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
211
261
311
361
411
461
Prototype Seconds

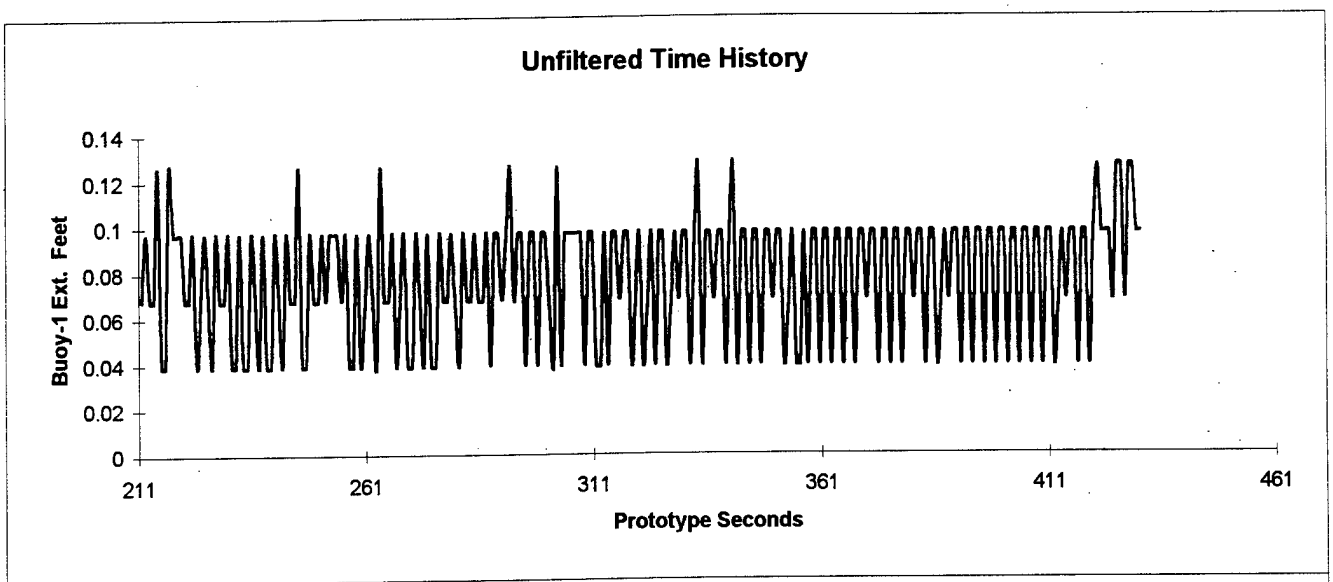

Unfiltered Time History
Surghe Feet
40
35
30
25
20
15
10
5
0
211
261
311
361
411
461
Prototype Seconds
Filtered Low Pass Time History
Surghe Feet
40
35
30
25
20
15
10
5
0
211
261
311
361
411
461
Prototype Seconds
Filtered High Pass Time History
Surghe Feet
15
10
5
0
-5
-10
-15
211
261
311
361
411
461
Prototype Seconds

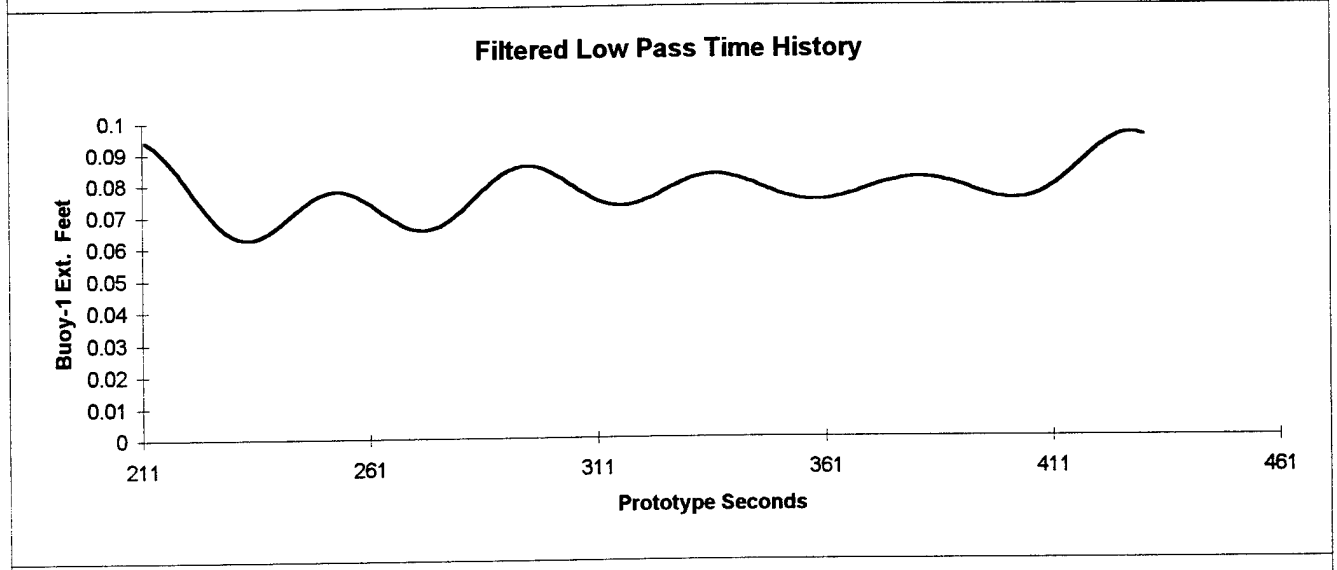

Unfiltered Time History
ML-1 Kips
400
350
300
250
200
150
100
50
0
211
261
311
361
411
461
Prototype Seconds

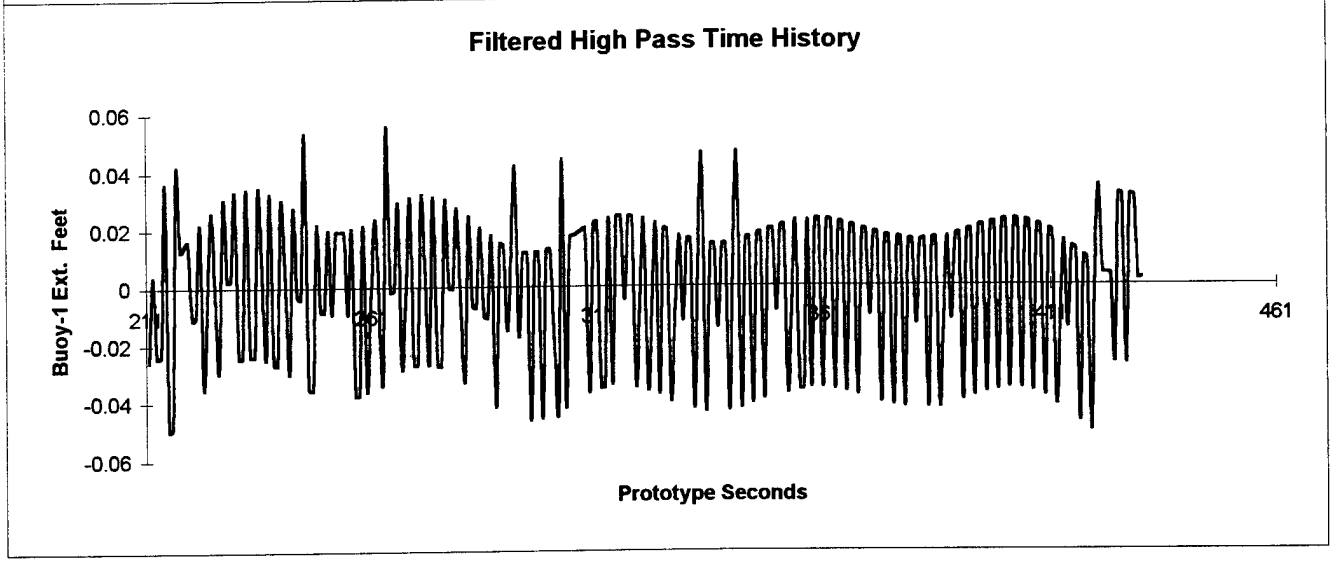

Filtered Low Pass Time History
ML-1 Kips
400
350
300
250
200
150
100
50
0
211
261
311
361
411
461
Prototype Seconds

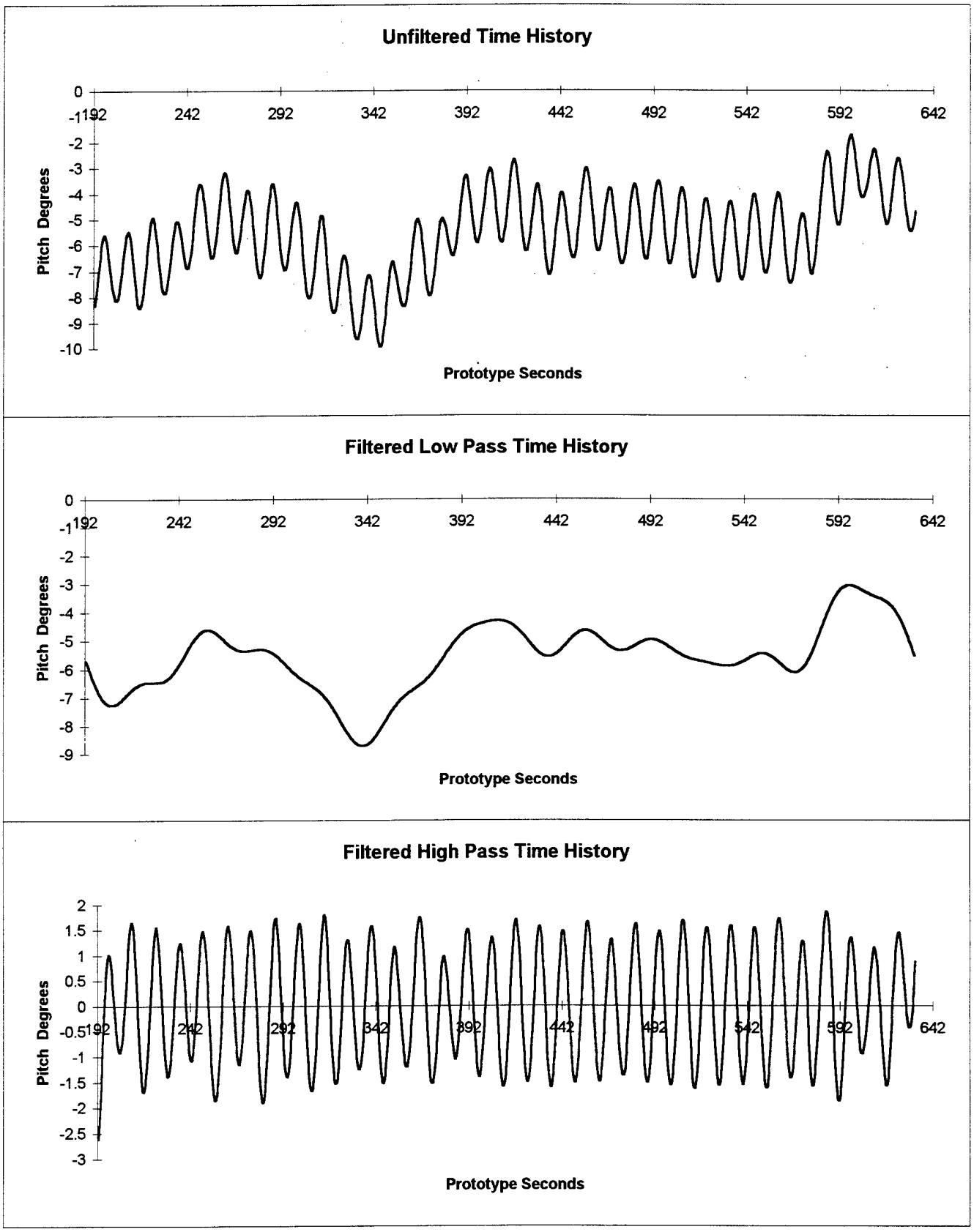

Filtered High Pass Time History
ML-1 Kips
6
4
2
0
-2
-4
-6
211
261
311
361
411
461
Prototype Seconds

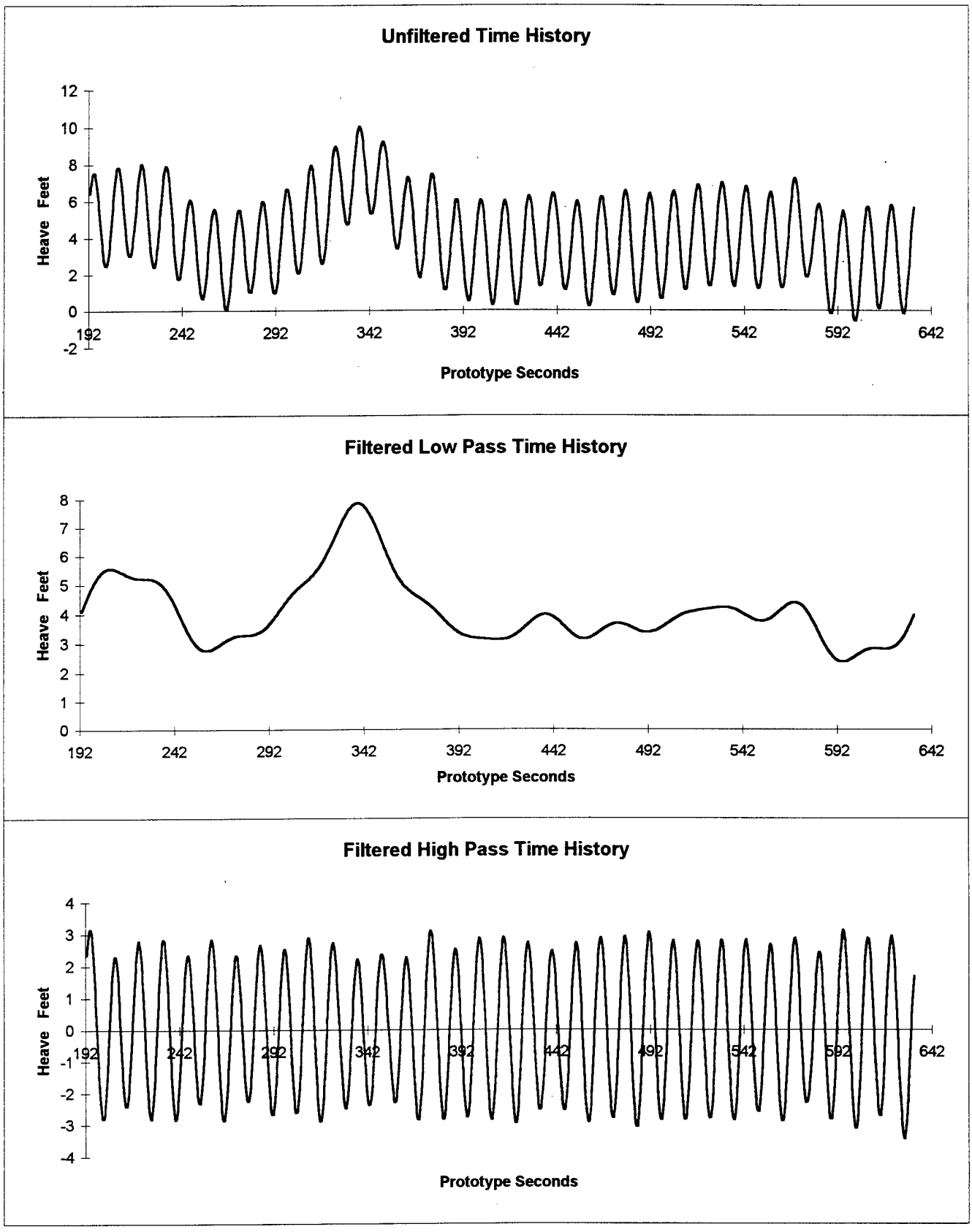

Unfiltered Time History
ML-2 Kips
325
320
315
310
305
300
295
290
285
280
275
270
211
261
311
361
411
461
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
325
320
315
310
305
300
295
290
285
280
275
270
211
261
311
361
411
461
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
3
2
1
0
-1
-2
-3
-4
461
Prototype Seconds

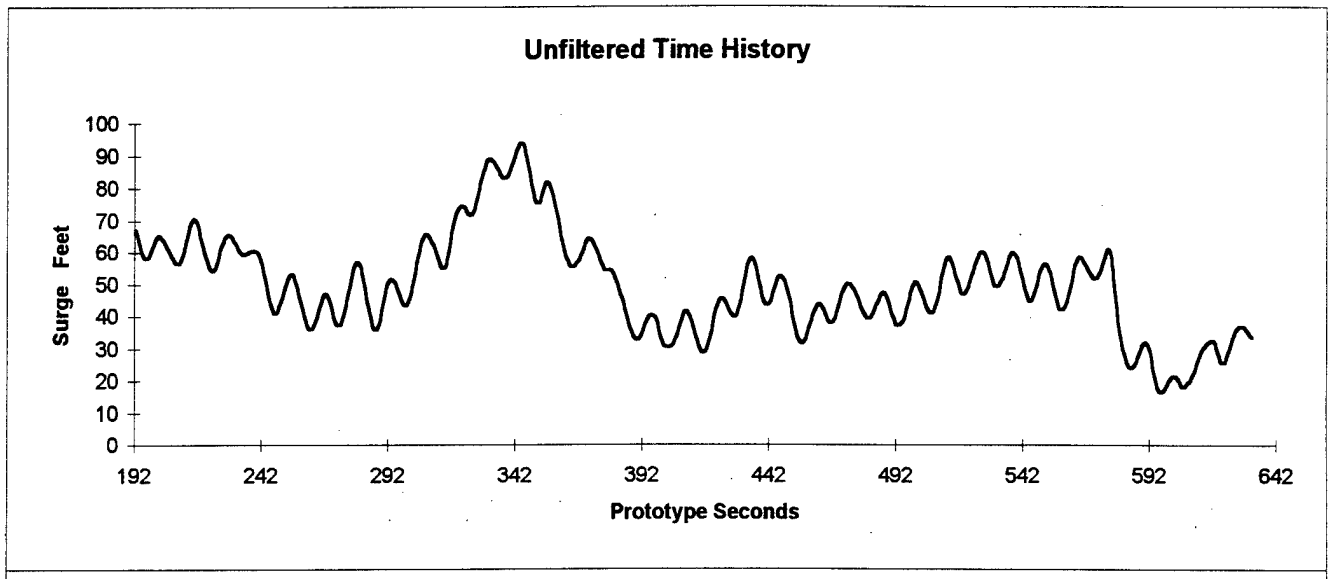

Unfiltered Time History
Buoy-1 Ext. Feet
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
211
261
311
361
411
461
Prototype Seconds

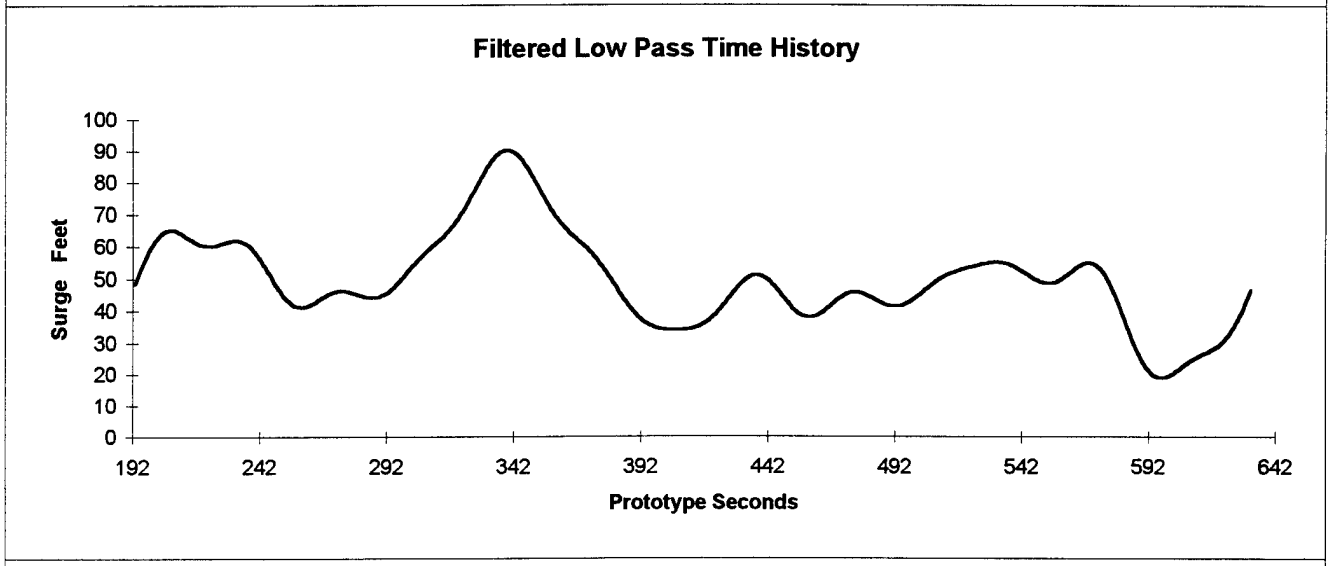

Filtered Low Pass Time History
Buoy-1 Ext. Feet
0.1
0.09
0.08
0.07
0.06
0.05
0.04
0.03
0.02
0.01
0
211
261
311
361
411
461
Prototype Seconds

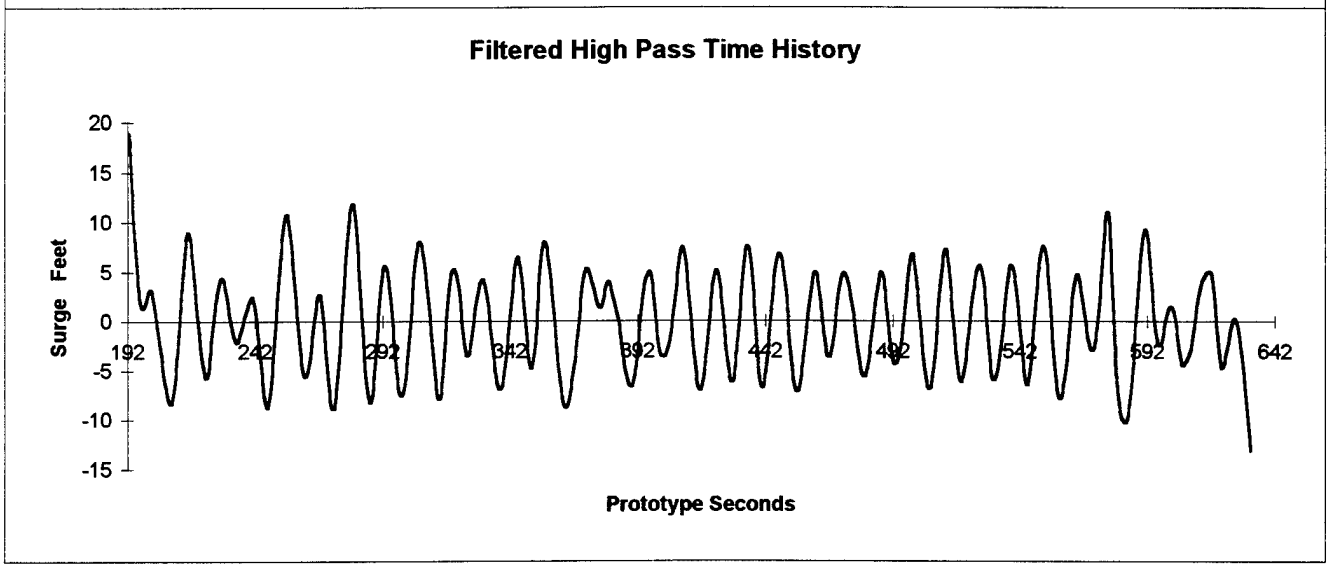

Filtered High Pass Time History
Buoy-1 Ext. Feet
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
461
Prototype Seconds

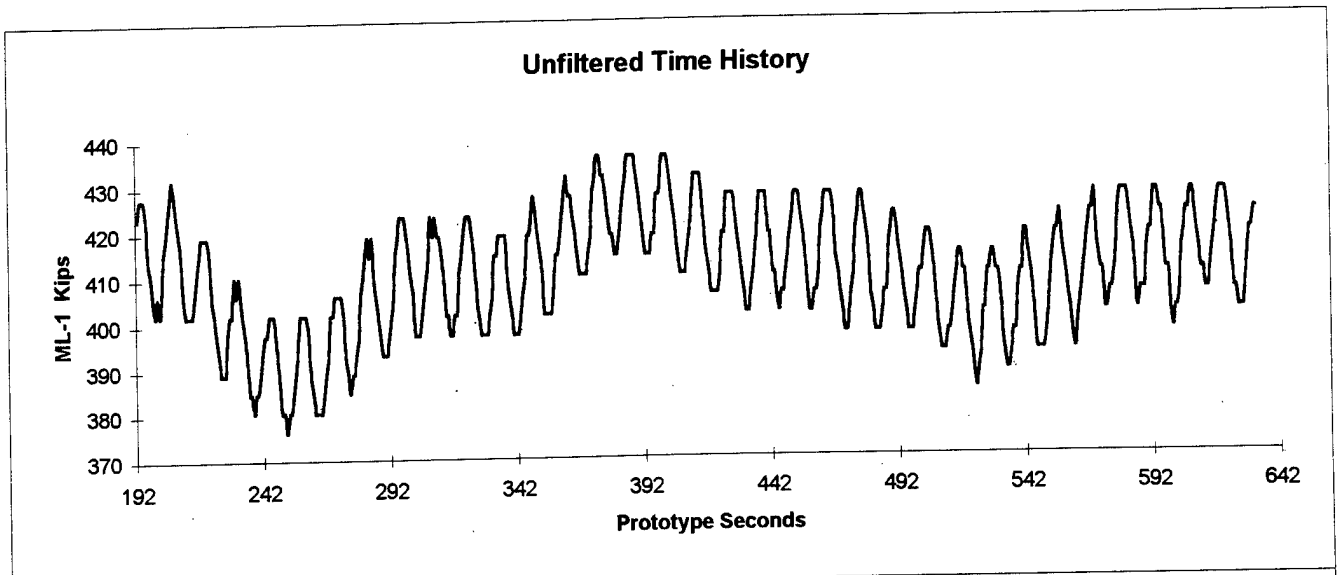

Unfiltered Time History
Pitch Degrees
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
192
242
292
342
392
442
492
542
592
642
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
192
242
292
342
392
442
492
542
592
642
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
192
242
292
342
392
442
492
542
592
642
Prototype Seconds

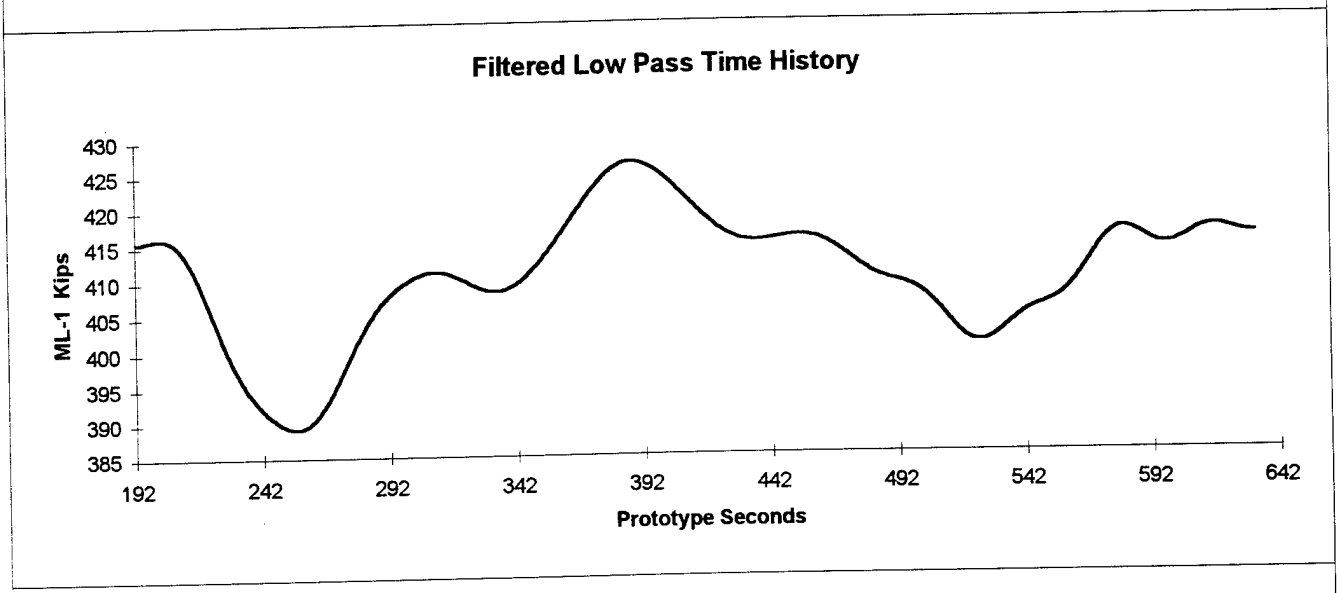

Unfiltered Time History
Heave Feet
12
10
8
6
4
2
0
-2
192
242
292
342
392
442
492
542
592
642
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
8
7
6
5
4
3
2
1
0
192
242
292
342
392
442
492
542
592
642
Prototype Seconds
Filtered High Pass Time History
Heave Feet
4
3
2
1
0
-1
-2
-3
-4
192
242
292
342
392
442
492
542
592
642
Prototype Seconds

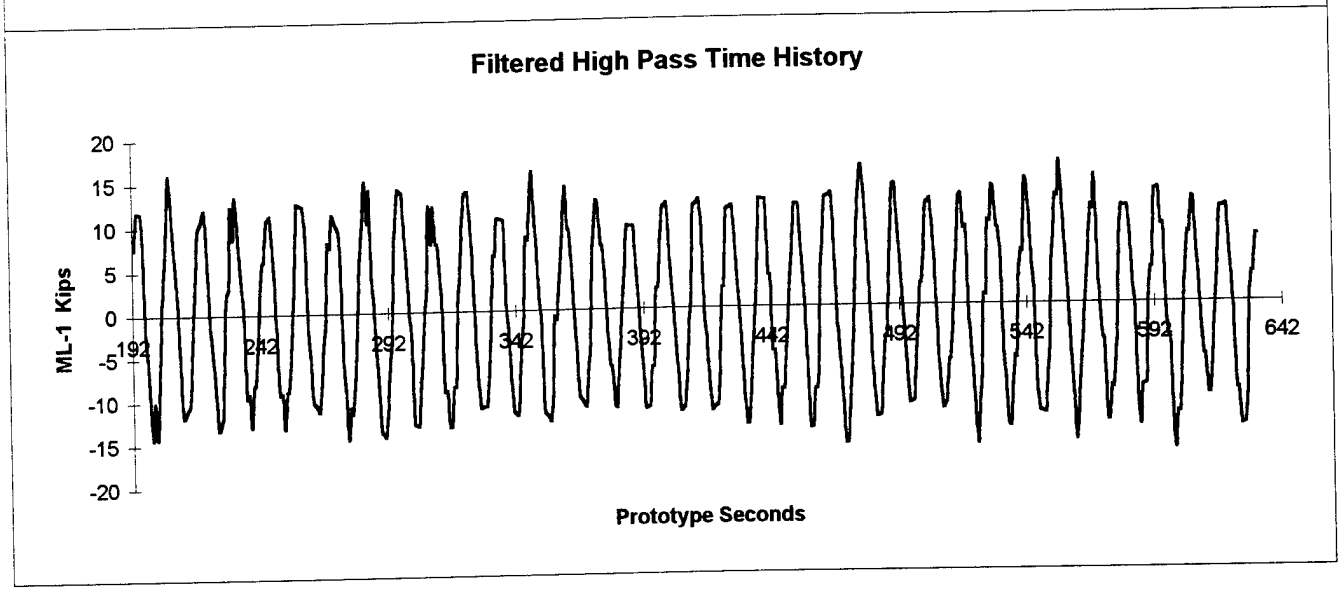

Unfiltered Time History
Surge Feet
100
90
80
70
60
50
40
30
20
10
0
192
242
292
342
392
442
492
542
592
642
Prototype Seconds

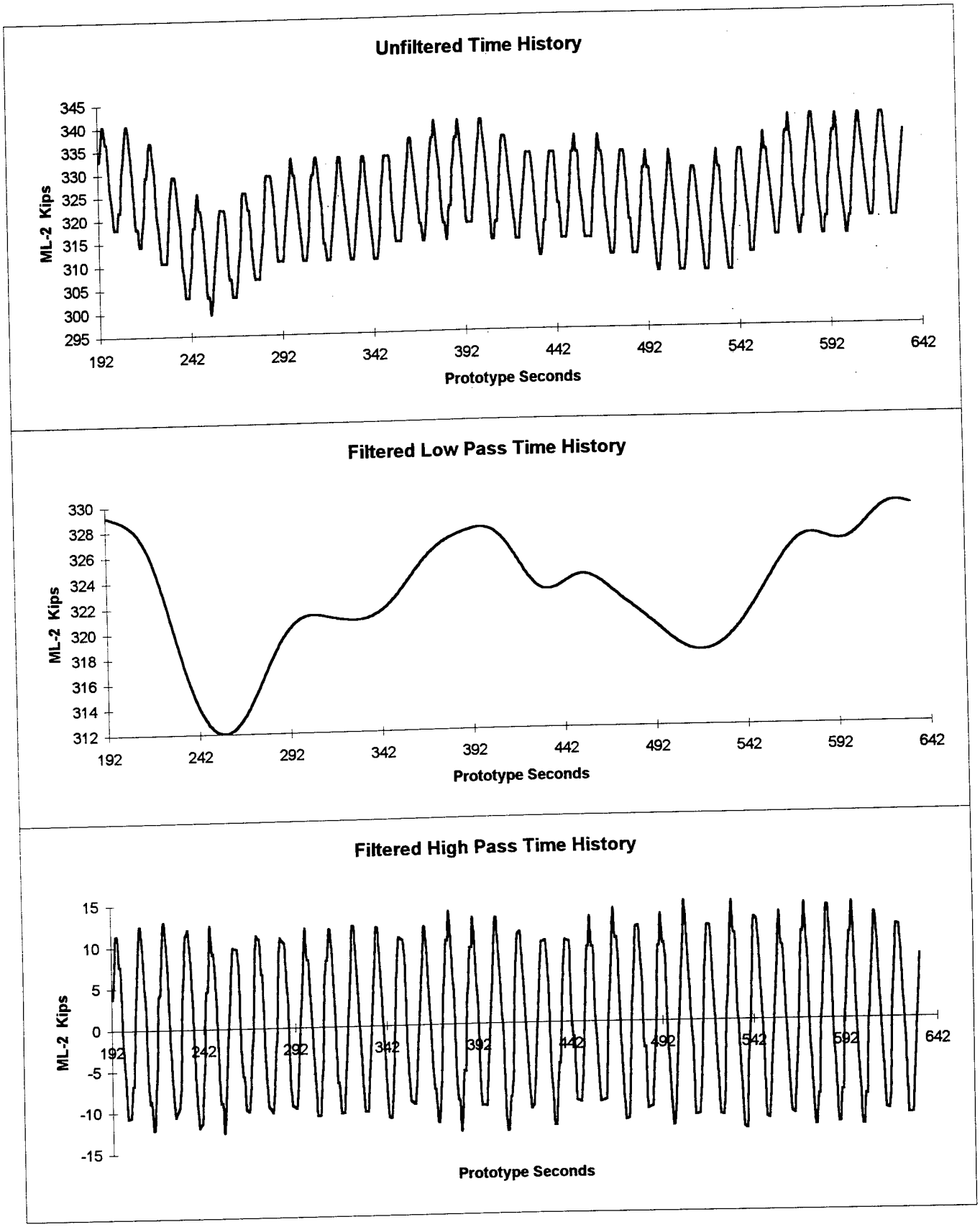

Filtered Low Pass Time History
Surge Feet
100
90
80
70
60
50
40
30
20
10
0
192
242
292
342
392
442
492
542
592
642
Prototype Seconds

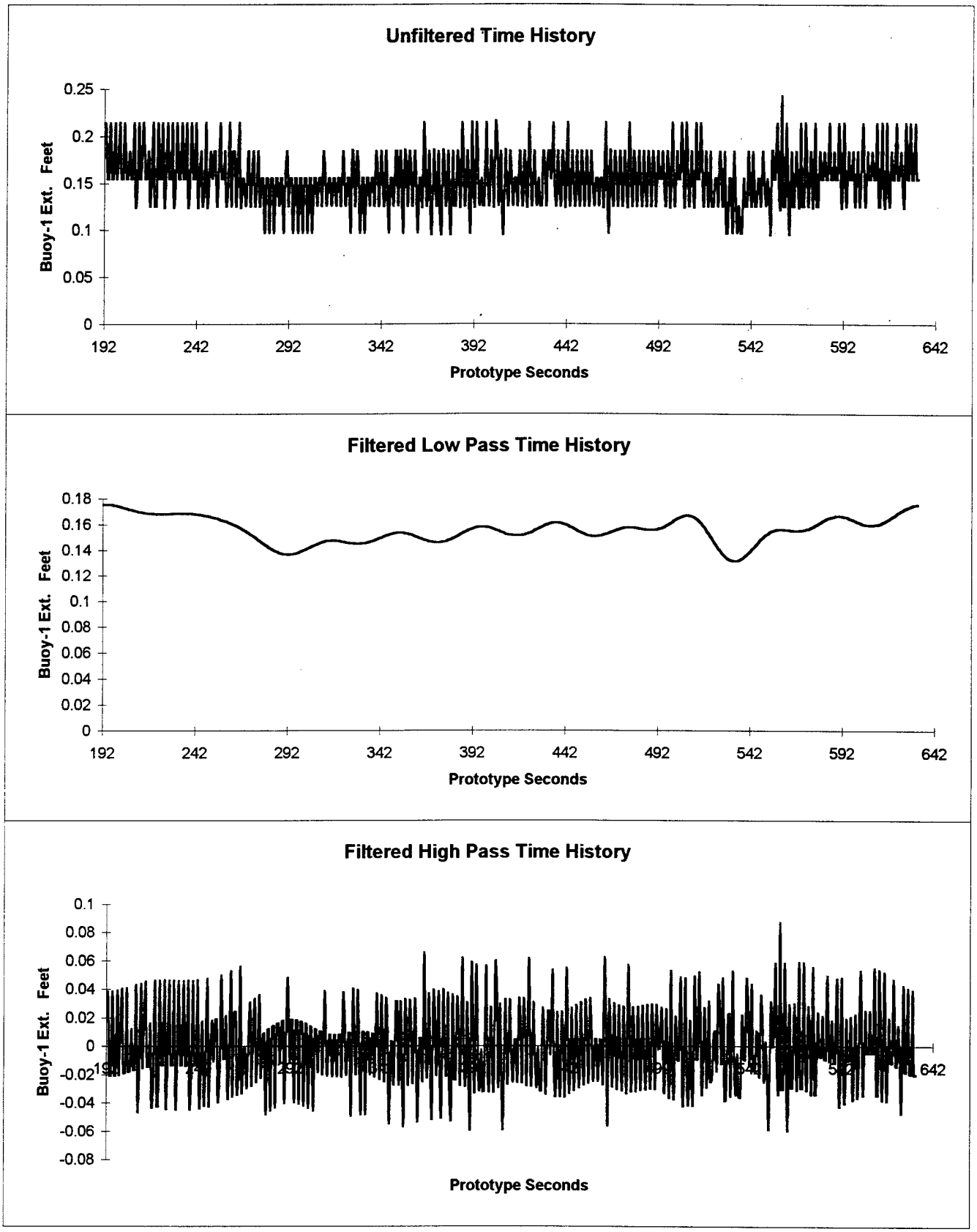

Filtered High Pass Time History
Surge Feet
20
15
10
5
0
-5
-10
-15
192
242
292
342
392
442
492
542
592
642
Prototype Seconds

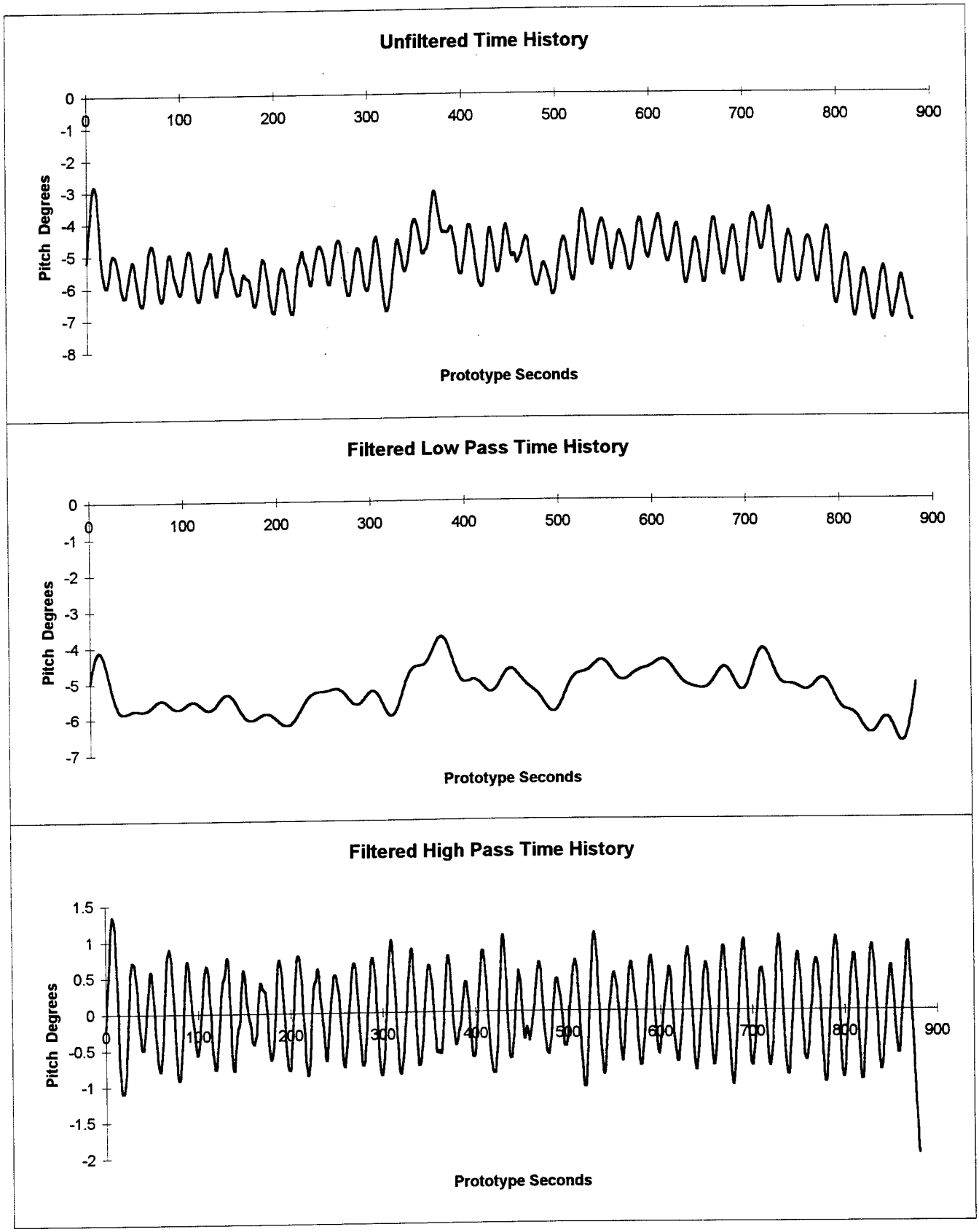

Unfiltered Time History
ML-1 Kips
440
430
420
410
400
390
380
370
192
242
292
342
392
442
492
542
592
642
Prototype Seconds

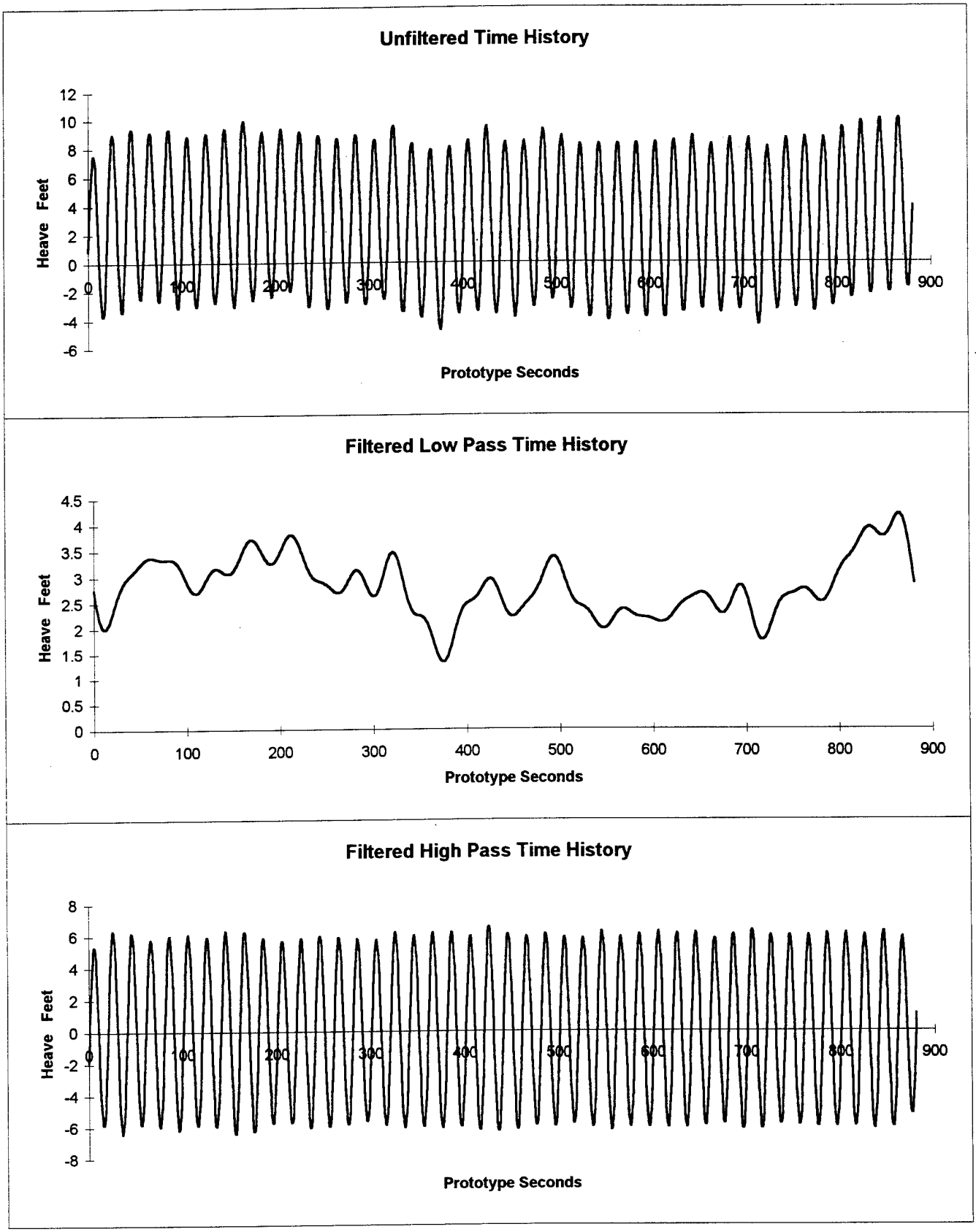

Filtered Low Pass Time History
ML-1 Kips
430
425
420
415
410
405
400
395
390
385
192
242
292
342
392
442
492
542
592
642
Prototype Seconds

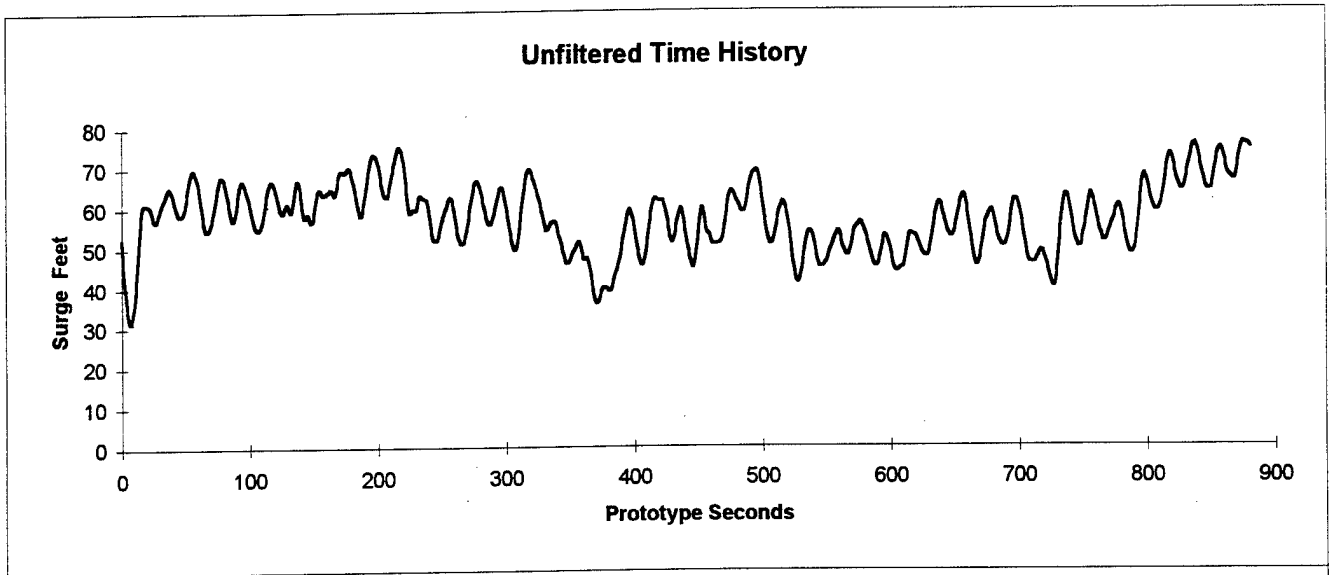

Filtered High Pass Time History
ML-1 Kips
20
15
10
5
0
-5
-10
-15
-20
192
242
292
342
392
442
492
542
592
642
Prototype Seconds

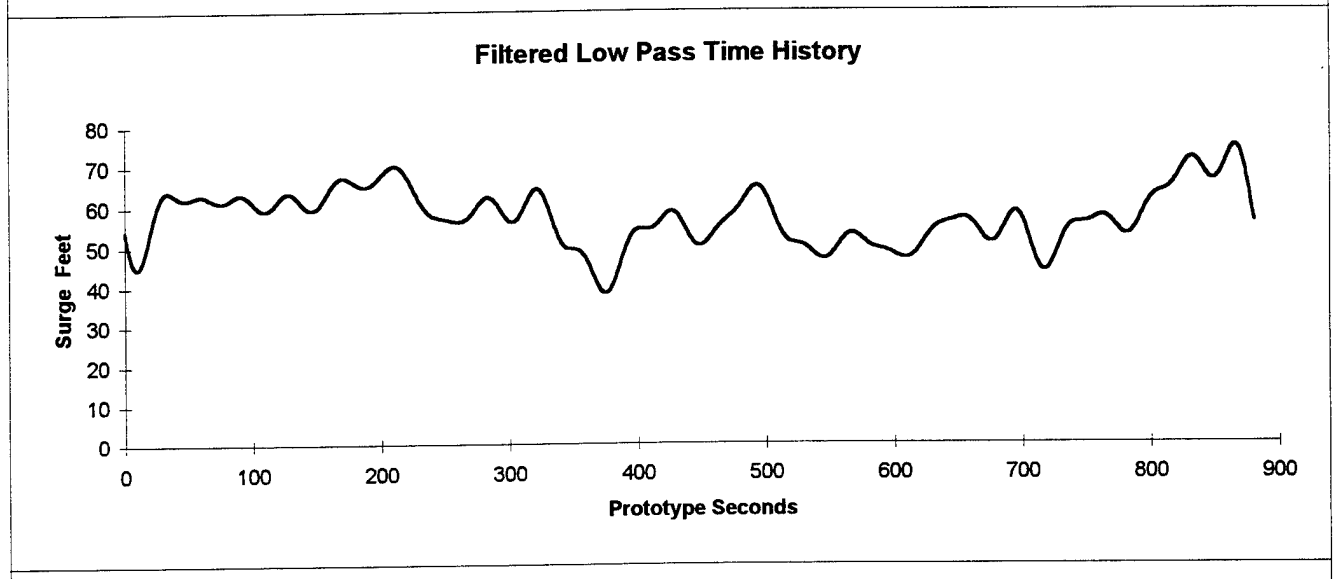

Unfiltered Time History
ML-2 Kips
345
340
335
330
325
320
315
310
305
300
295
192
242
292
342
392
442
492
542
592
642
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
330
328
326
324
322
320
318
316
314
312
192
242
292
342
392
442
492
542
592
642
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
15
10
5
0
-5
-10
-15
192
242
292
342
392
442
492
542
592
642
Prototype Seconds

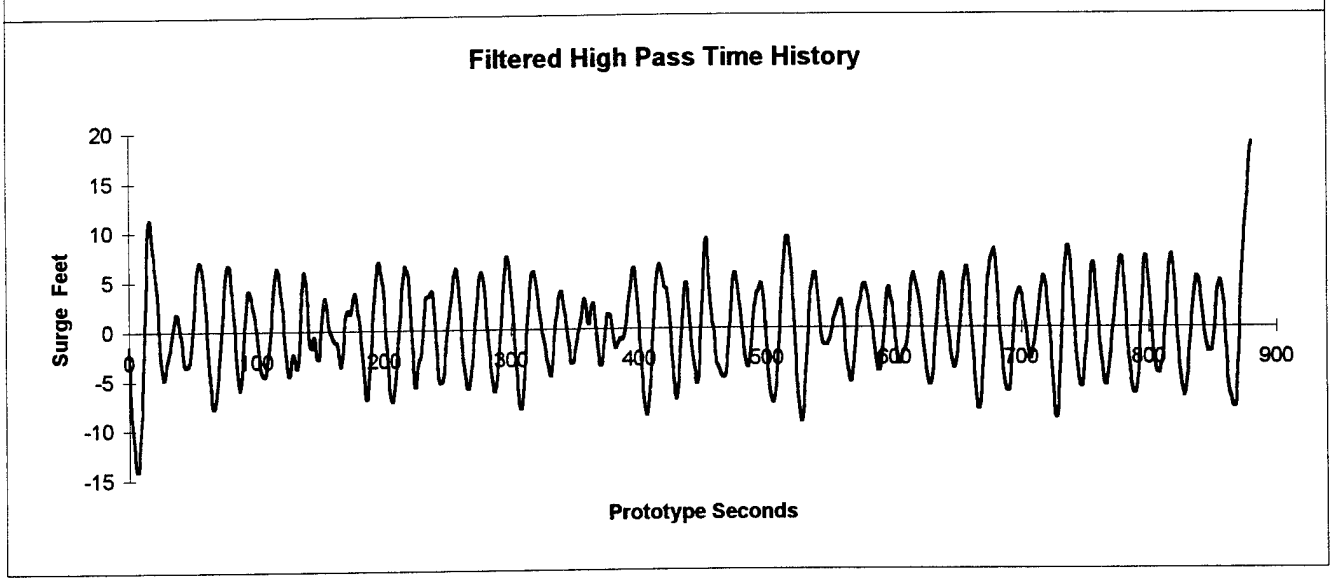

Unfiltered Time History
Buoy-1 Ext. Feet
0.25
0.2
0.15
0.1
0.05
0
192
242
292
342
392
442
492
542
592
642
Prototype Seconds
Filtered Low Pass Time History
Buoy-1 Ext. Feet
0.18
0.16
0.14
0.12
0.1
0.08
0.06
0.04
0.02
0
192
242
292
342
392
442
492
542
592
642
Prototype Seconds
Filtered High Pass Time History
Buoy-1 Ext. Feet
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
642
Prototype Seconds

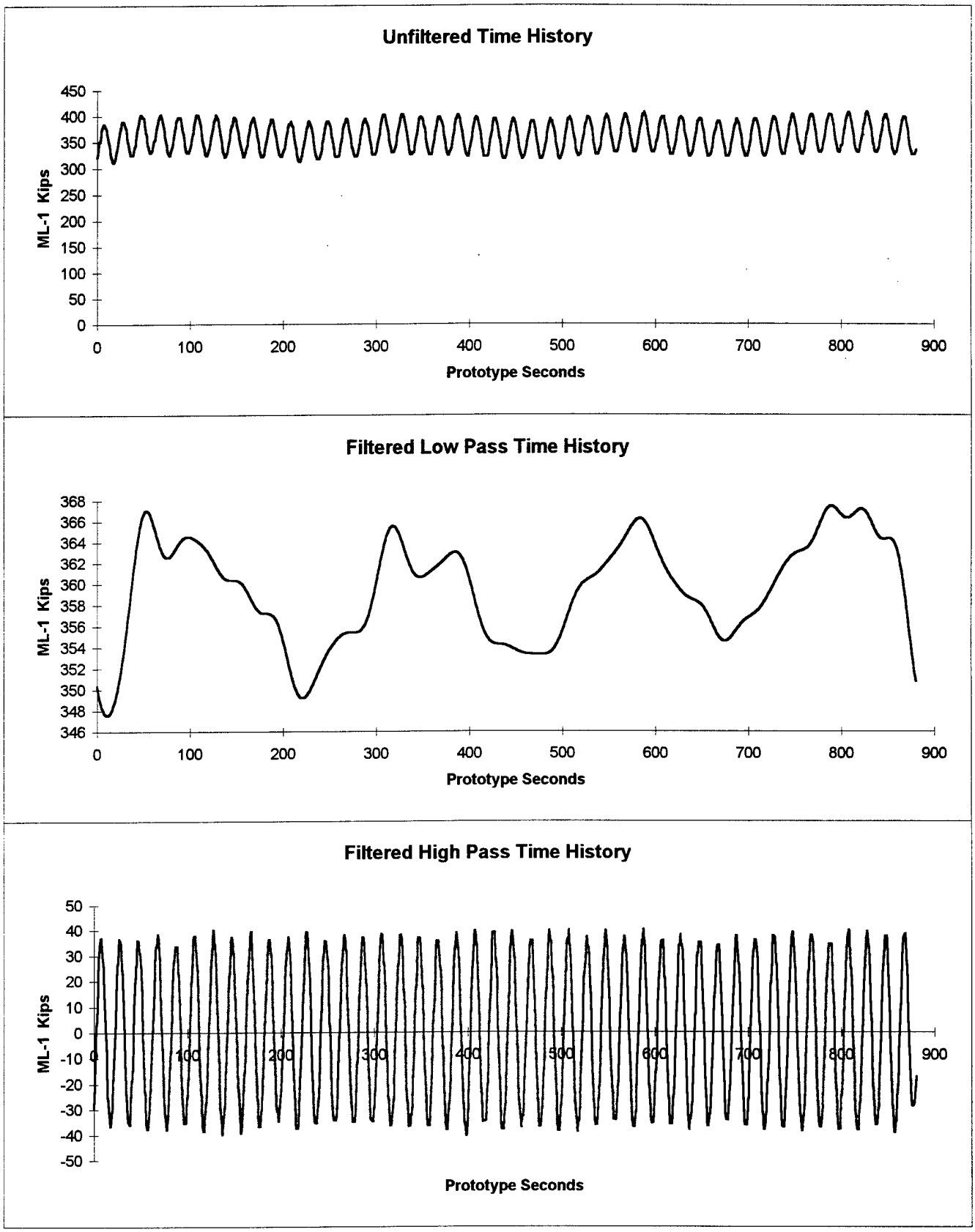

Unfiltered Time History
Pitch Degrees
0
-1
-2
-3
-4
-5
-6
-7
-8
0
100
200
300
400
500
600
700
800
900
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
0
-1
-2
-3
-4
-5
-6
-7
0
100
200
300
400
500
600
700
800
900
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
-2
0
100
200
300
400
500
600
700
800
900
Prototype Seconds

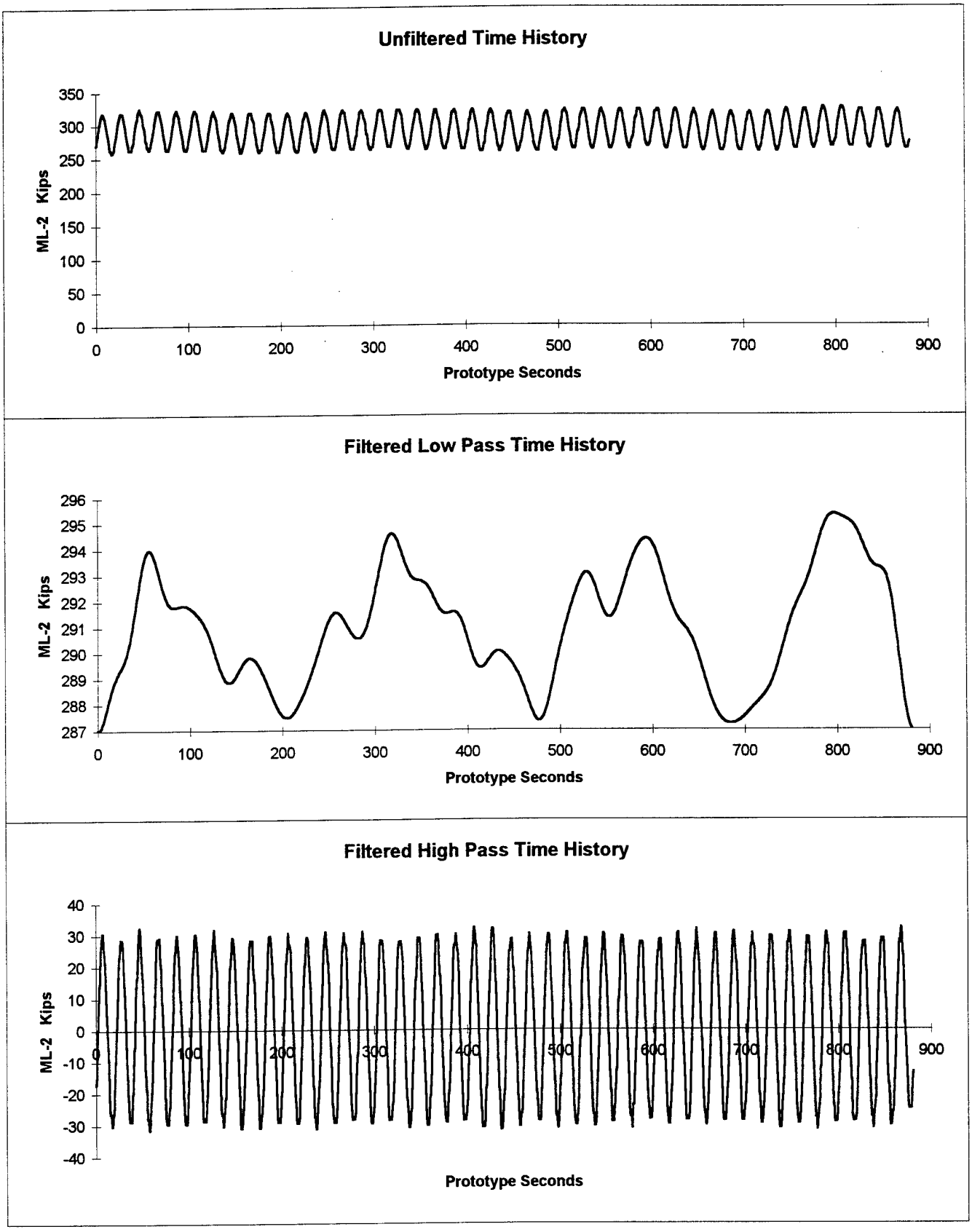

Unfiltered Time History
Heave Feet
12
10
8
6
4
2
0
-2
-4
-6
0
100
200
300
400
500
600
700
800
900
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
4.5
4
3.5
3
2.5
2
1.5
1
0.5
0
0
100
200
300
400
500
600
700
800
900
Prototype Seconds
Filtered High Pass Time History
Heave Feet
8
6
4
2
0
-2
-4
-6
-8
0
100
200
300
400
500
600
700
800
900
Prototype Seconds

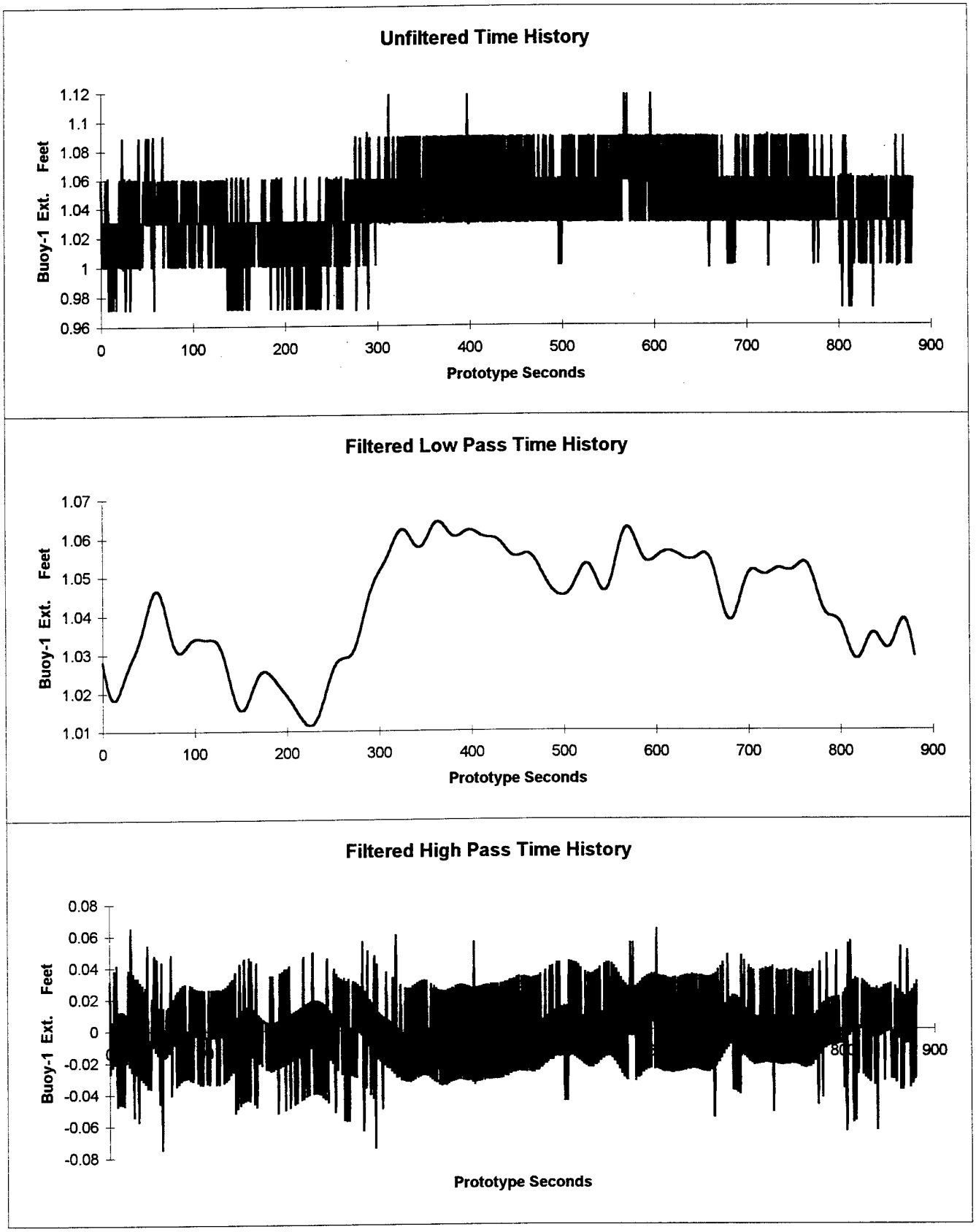

Unfiltered Time History
Surge Feet
80
70
60
50
40
30
20
10
0
0
100
200
300
400
500
600
700
800
900
Prototype Seconds

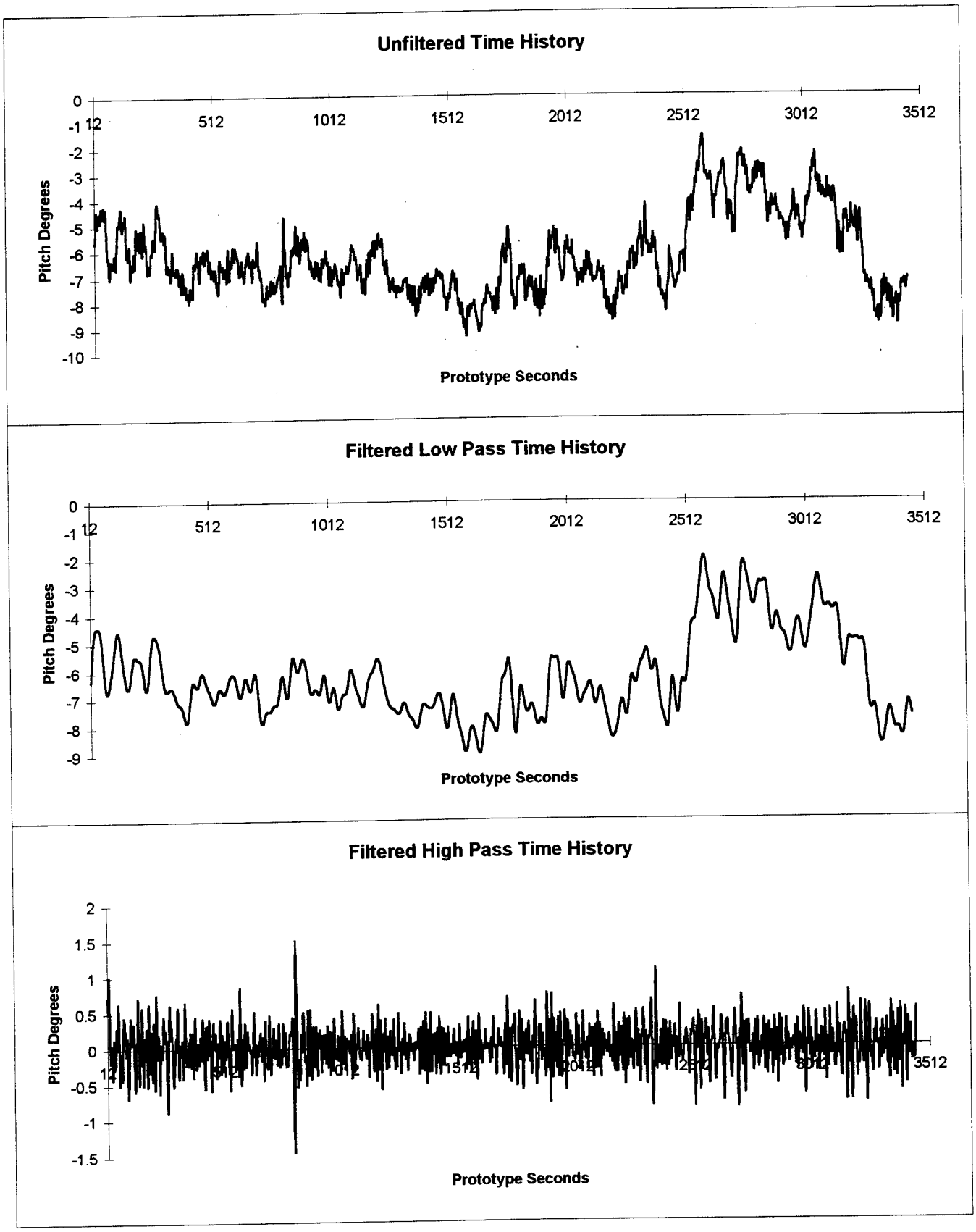

Filtered Low Pass Time History
Surge Feet
80
70
60
50
40
30
20
10
0
0
100
200
300
400
500
600
700
800
900
Prototype Seconds

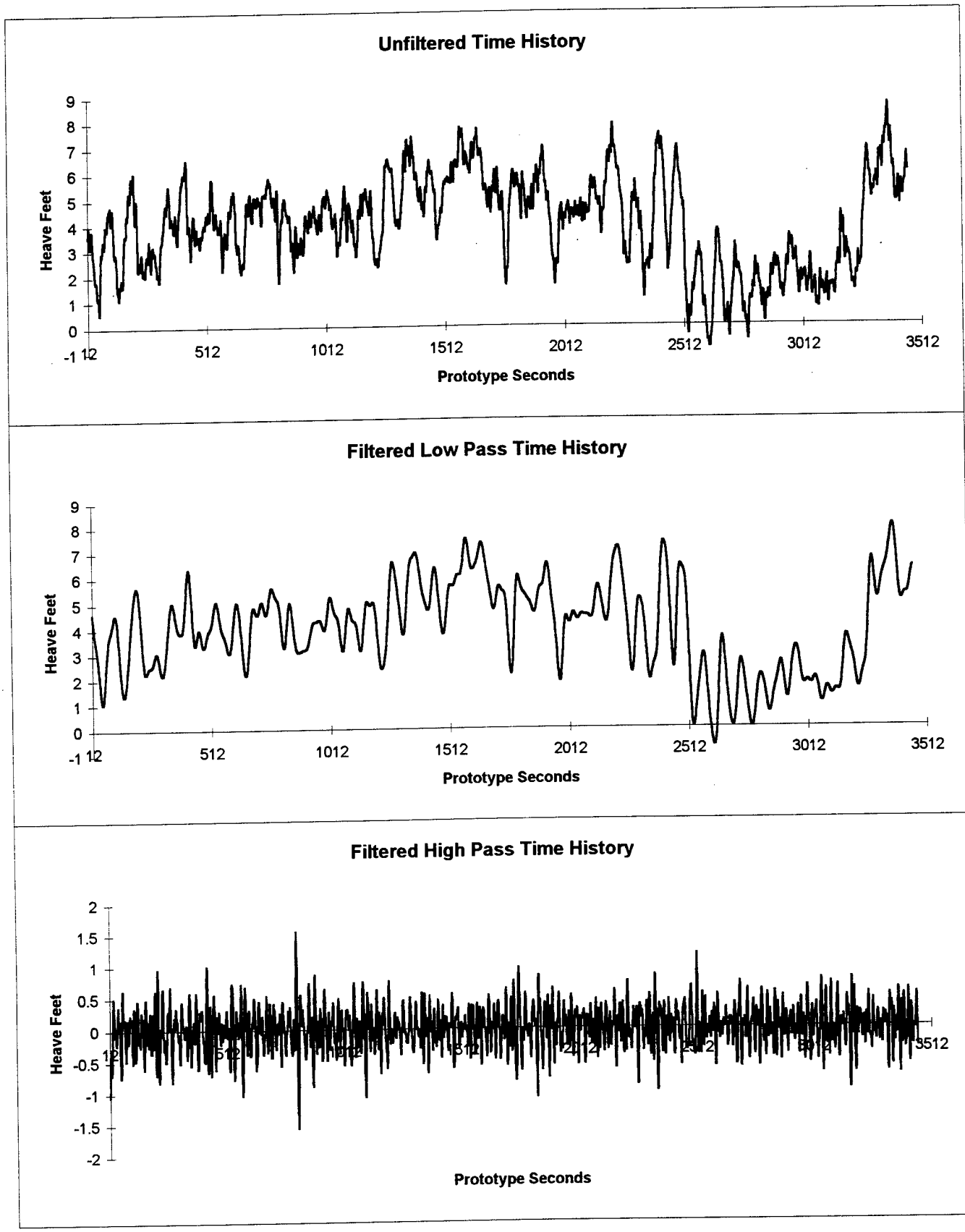

Filtered High Pass Time History
Surge Feet
20
15
10
5
0
-5
-10
-15
0
100
200
300
400
500
600
700
800
900
Prototype Seconds

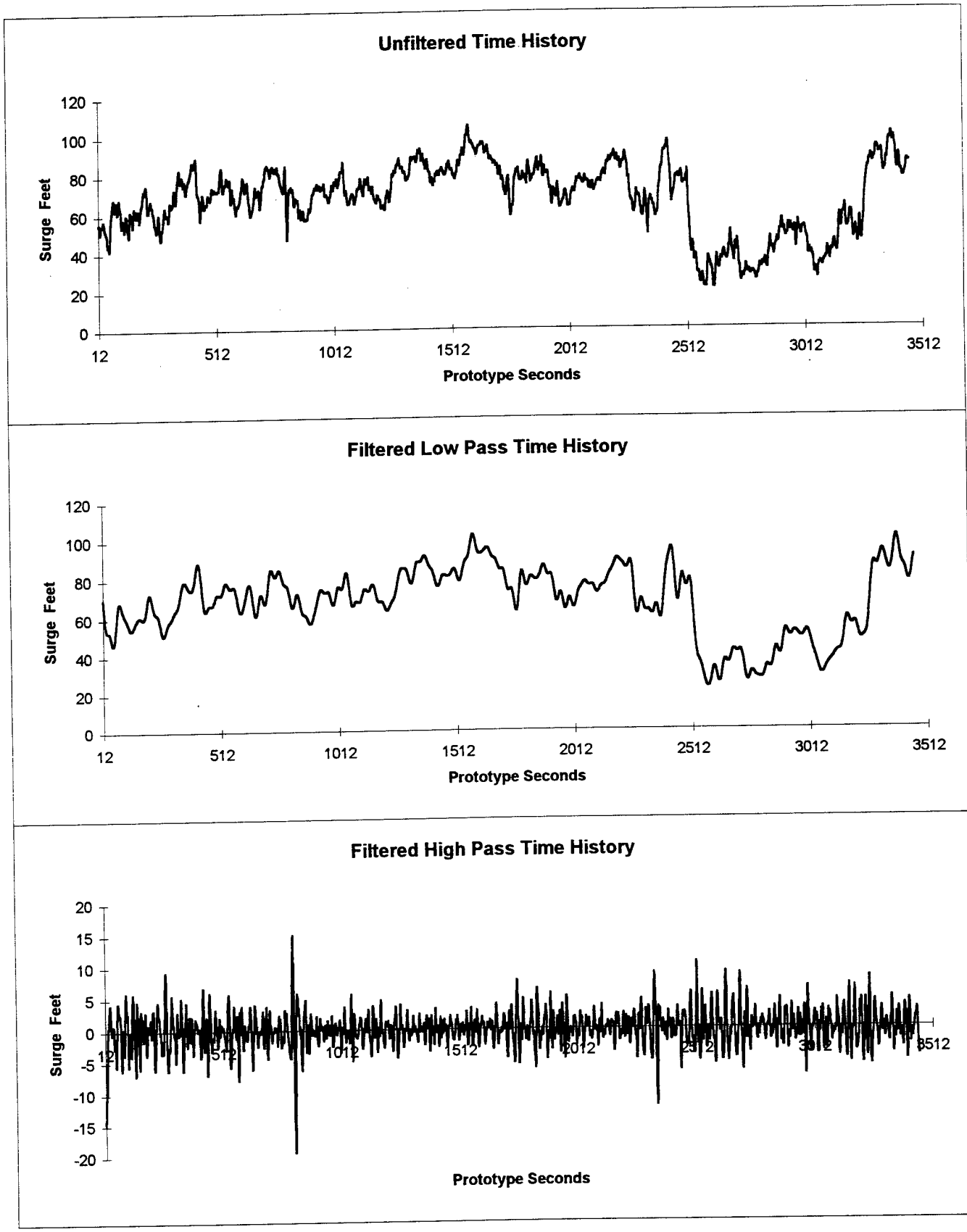

Unfiltered Time History
ML-1 Kips
450
400
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
368
366
364
362
360
358
356
354
352
350
348
346
0
100
200
300
400
500
600
700
800
900
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
50
40
30
20
10
0
-10
-20
-30
-40
-50
0
100
200
300
400
500
600
700
800
900
Prototype Seconds

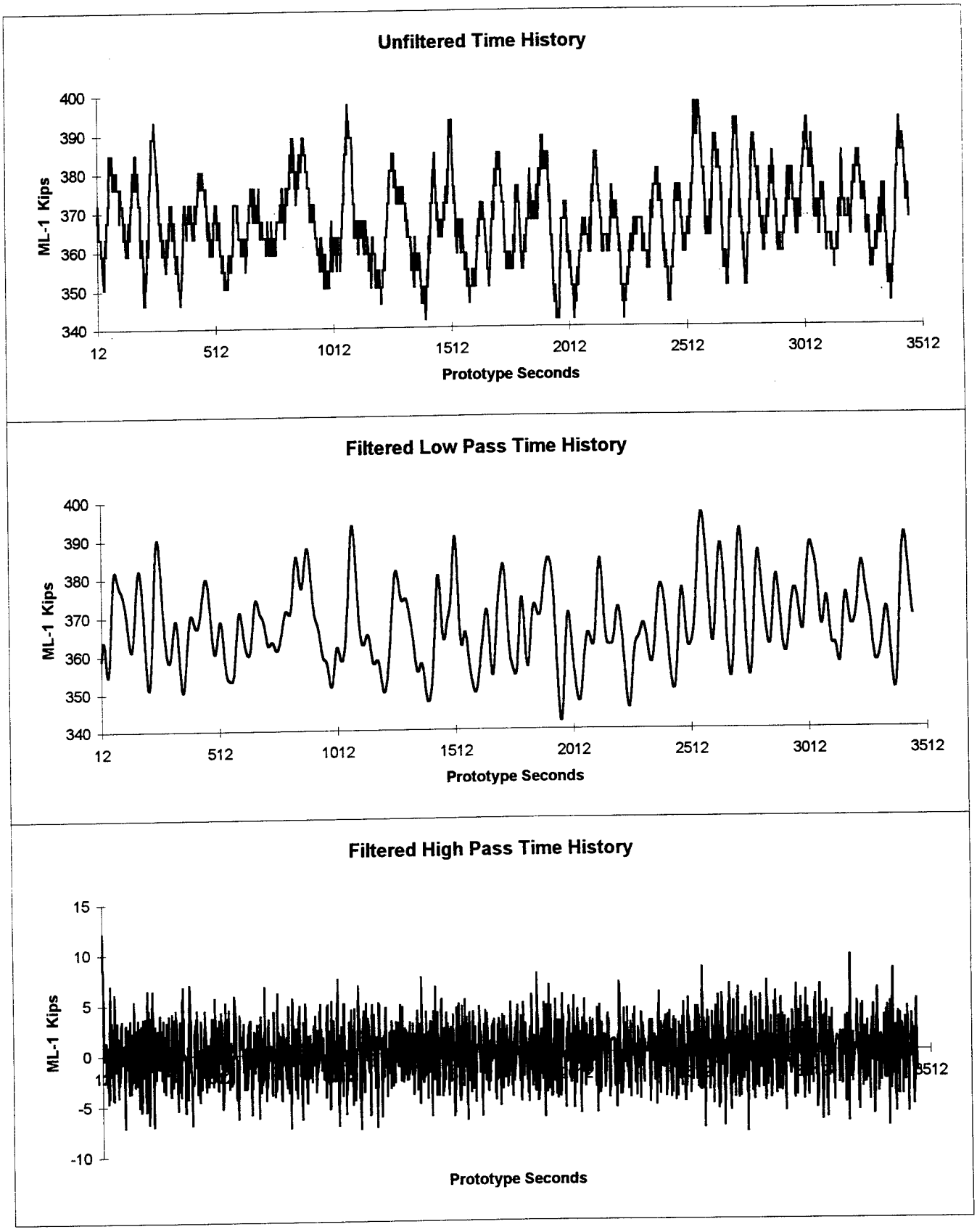

Unfiltered Time History
ML-2 Kips
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
296
295
294
293
292
291
290
289
288
287
0
100
200
300
400
500
600
700
800
900
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
40
30
20
10
0
-10
-20
-30
-40
0
100
200
300
400
500
600
700
800
900
Prototype Seconds

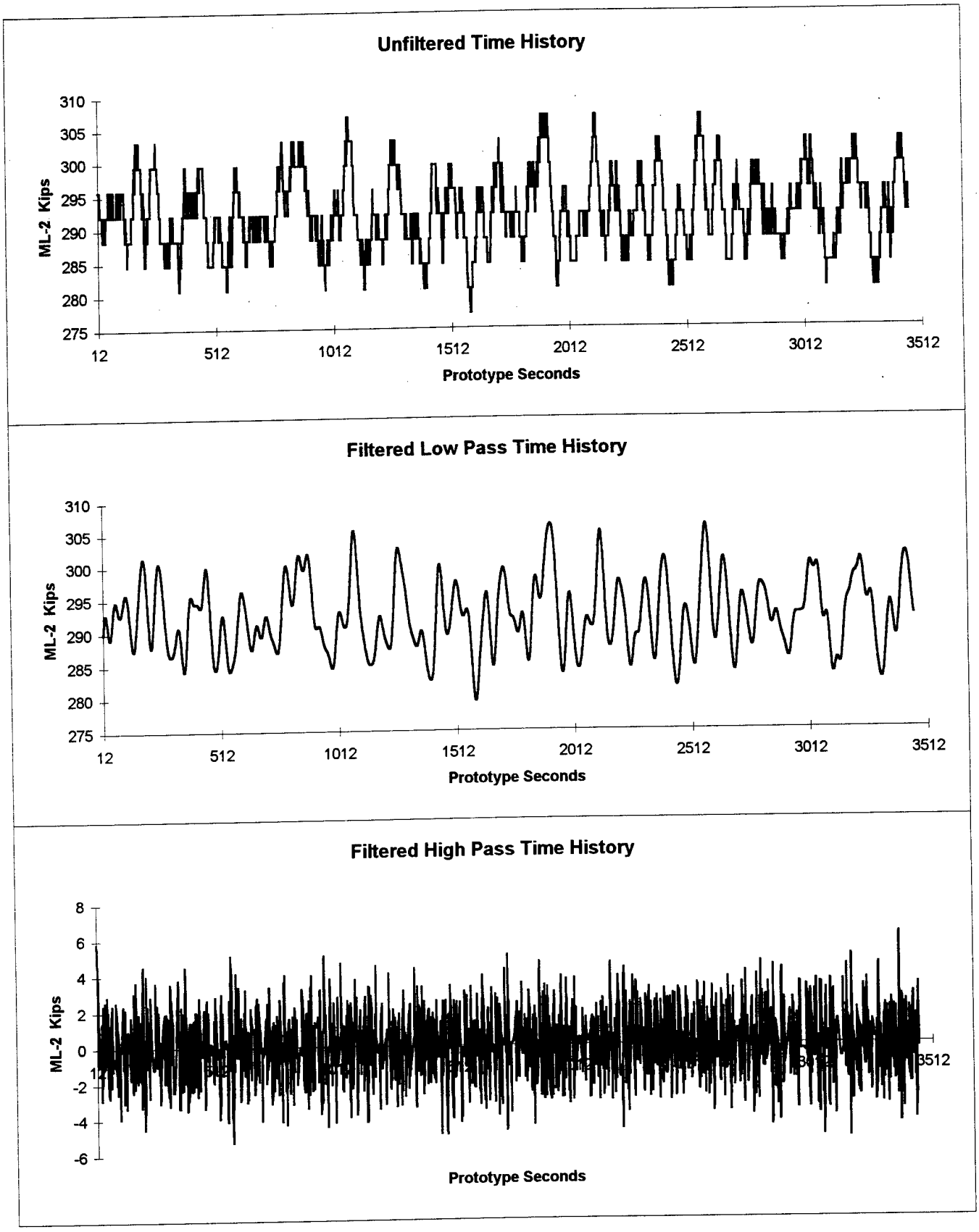

Unfiltered Time History
Buoy-1 Ext. Feet
1.12
1.1
1.08
1.06
1.04
1.02
1
0.98
0.96
0
100
200
300
400
500
600
700
800
900
Prototype Seconds
Filtered Low Pass Time History
Buoy-1 Ext. Feet
1.07
1.06
1.05
1.04
1.03
1.02
1.01
0
100
200
300
400
500
600
700
800
900
Prototype Seconds
Filtered High Pass Time History
Buoy-1 Ext. Feet
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
900
Prototype Seconds

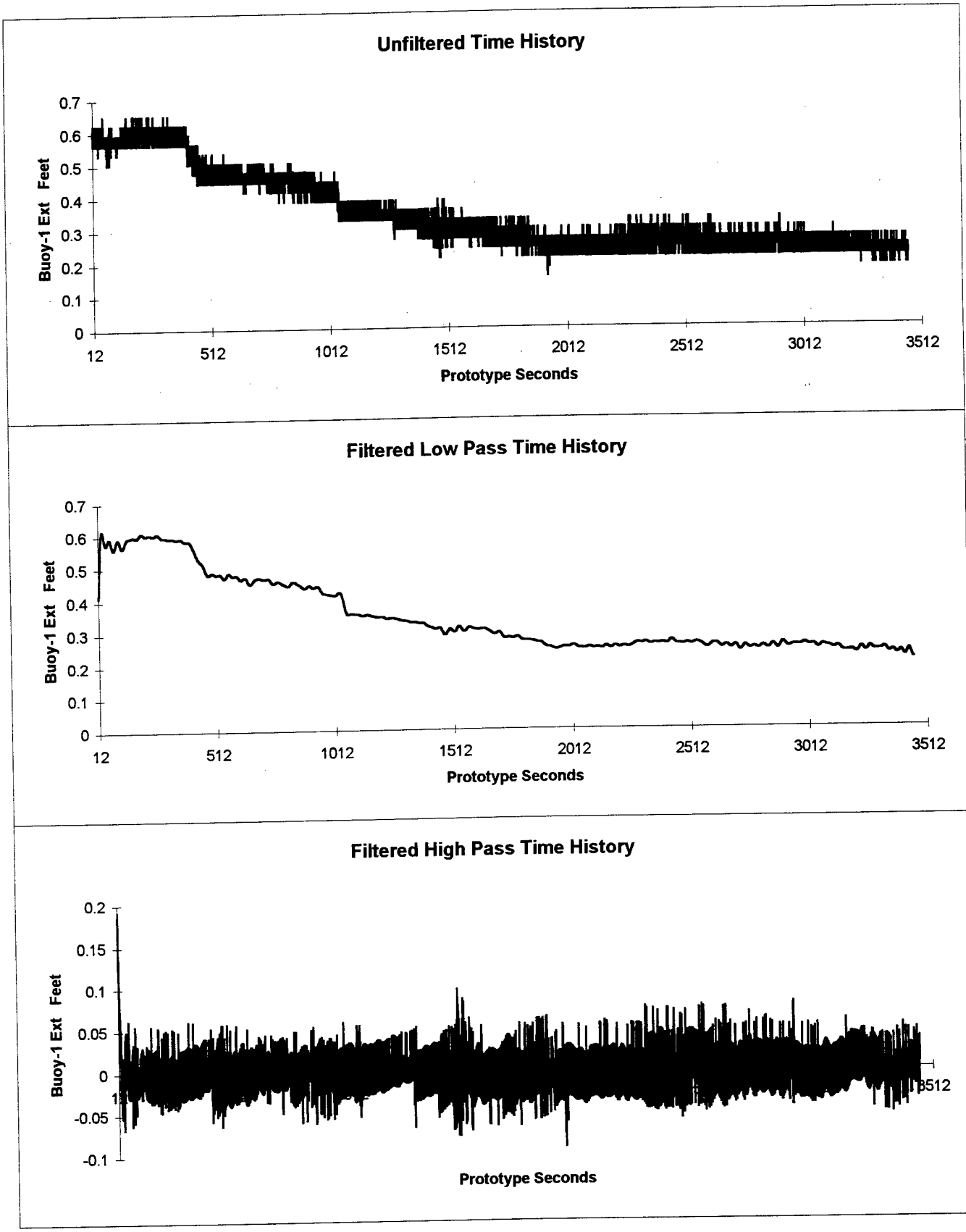

Unfiltered Time History
Pitch Degrees
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
2
1.5
1
0.5
0
-0.5
-1
-1.5
12
3512
Prototype Seconds

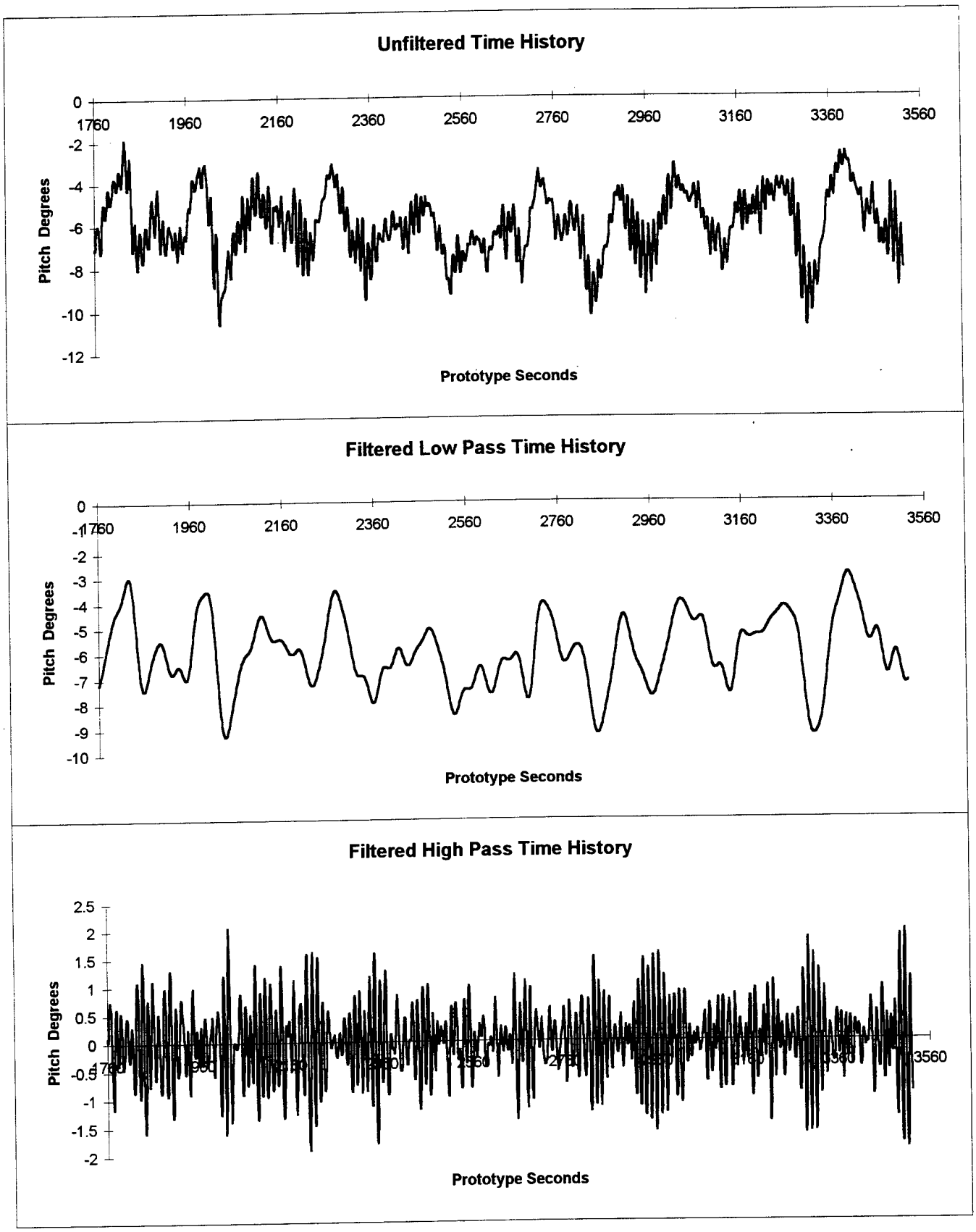

Unfiltered Time History
Heave Feet
9
8
7
6
5
4
3
2
1
0
-1
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
9
8
7
6
5
4
3
2
1
0
-1
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered High Pass Time History
Heave Feet
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
12
3512
Prototype Seconds

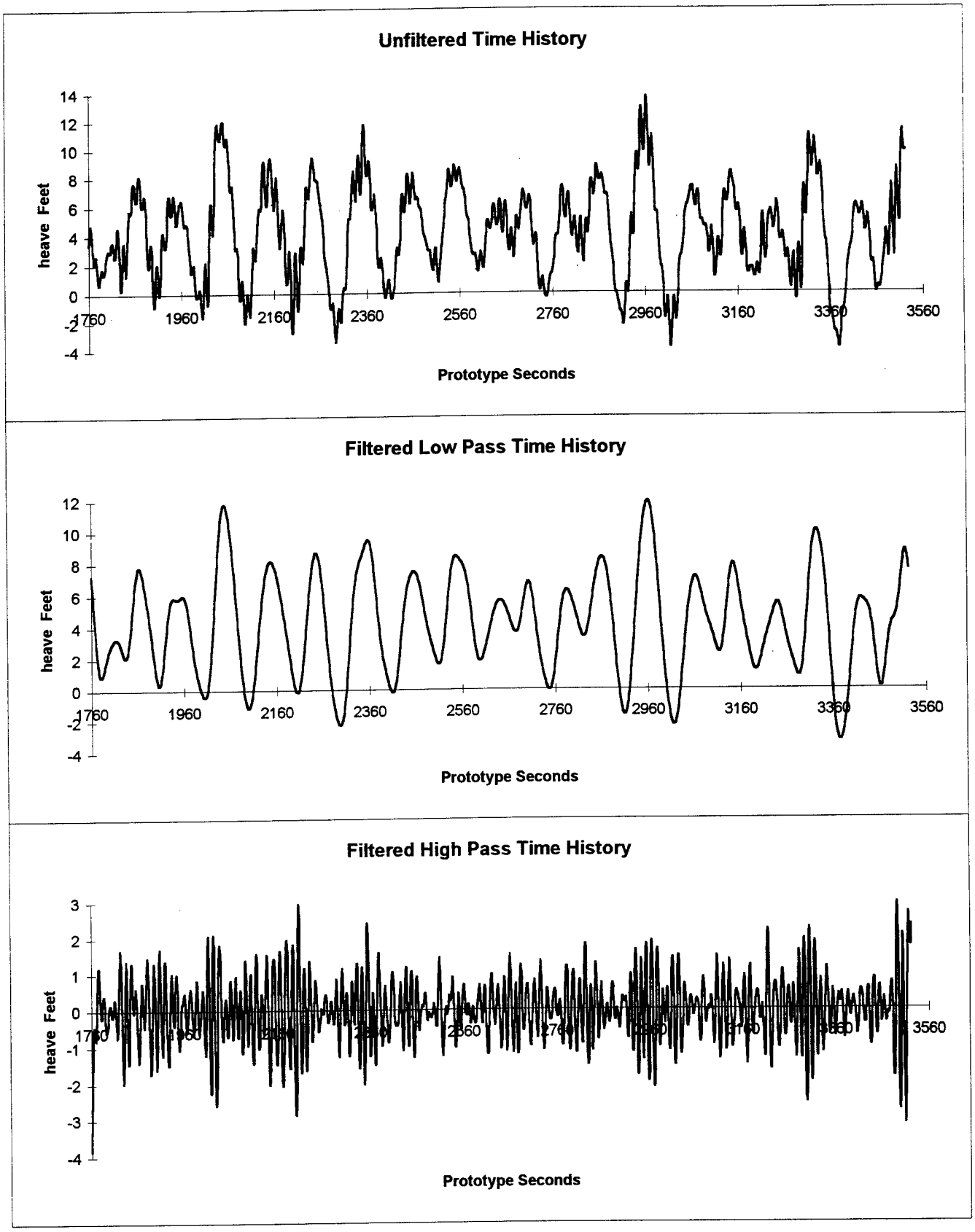

Unfiltered Time History
Surge Feet
120
100
80
60
40
20
0
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
120
100
80
60
40
20
0
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered High Pass Time History
Surge Feet
20
15
10
5
0
-5
-10
-15
-20
Prototype Seconds

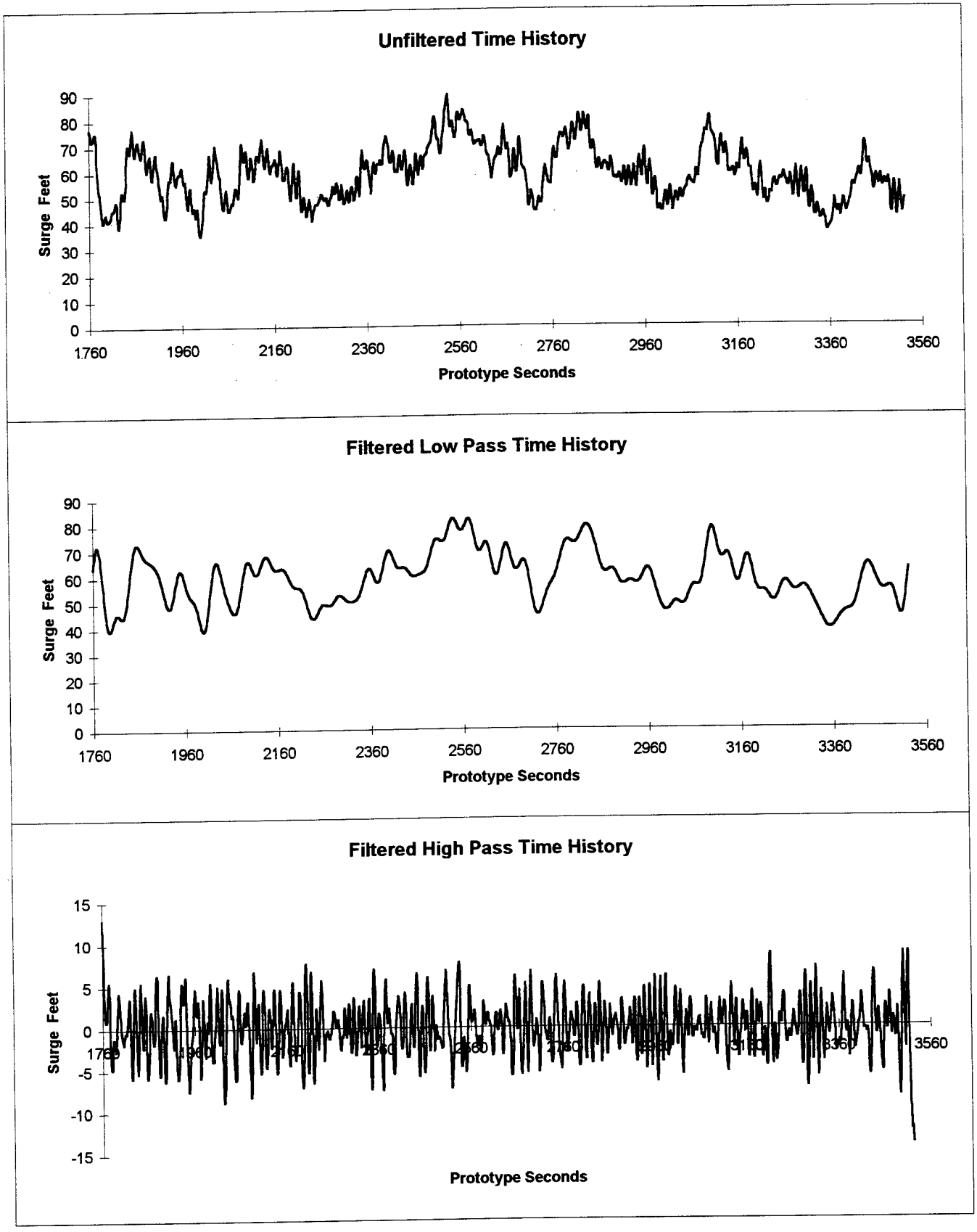

Unfiltered Time History
ML-1 Kips
400
390
380
370
360
350
340
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
400
390
380
370
360
350
340
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
15
10
5
0
-5
-10
3512
Prototype Seconds

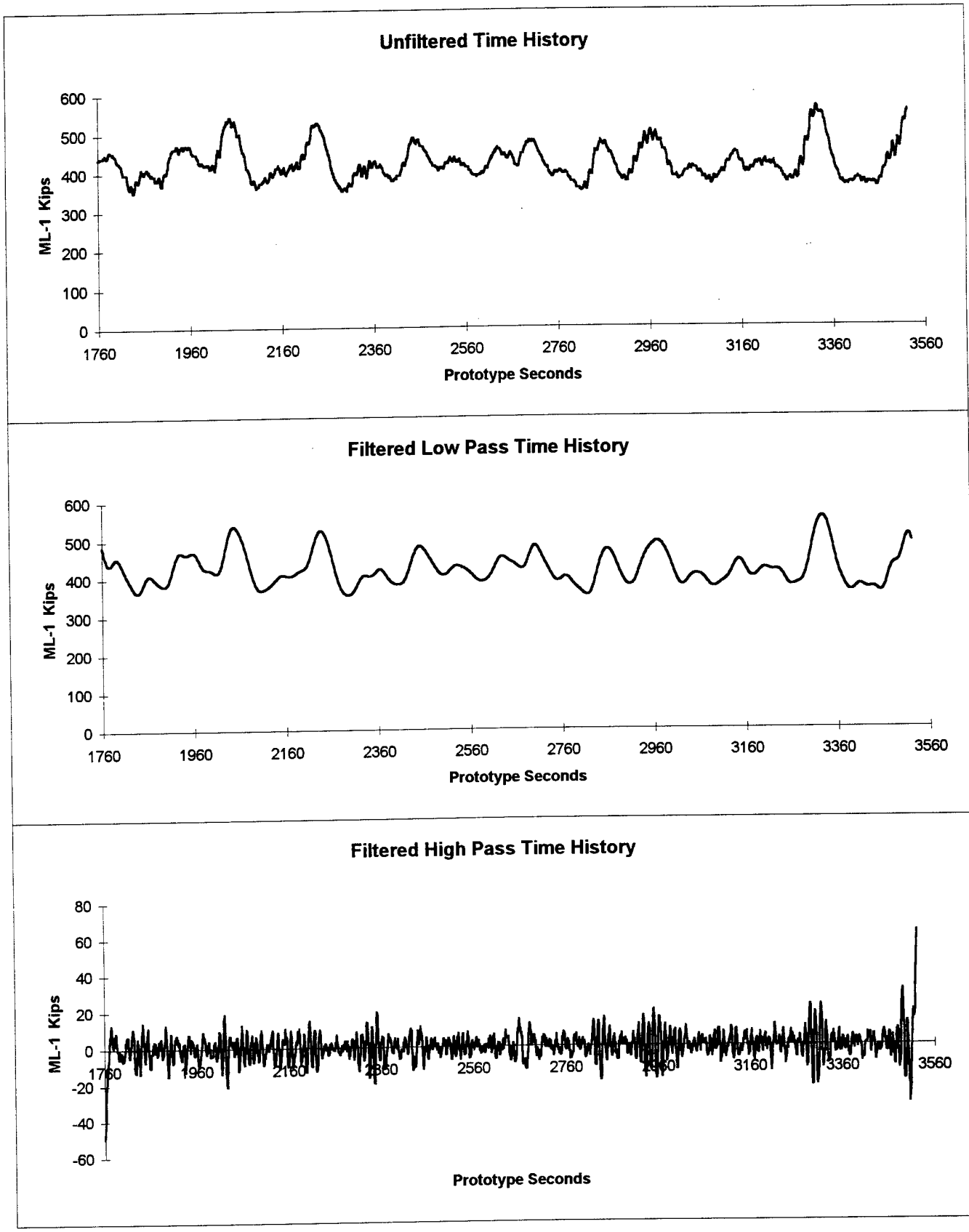

Unfiltered Time History
ML-2 Kips
310
305
300
295
290
285
280
275
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
310
305
300
295
290
285
280
275
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
8
6
4
2
0
-2
-4
-6
3512
Prototype Seconds

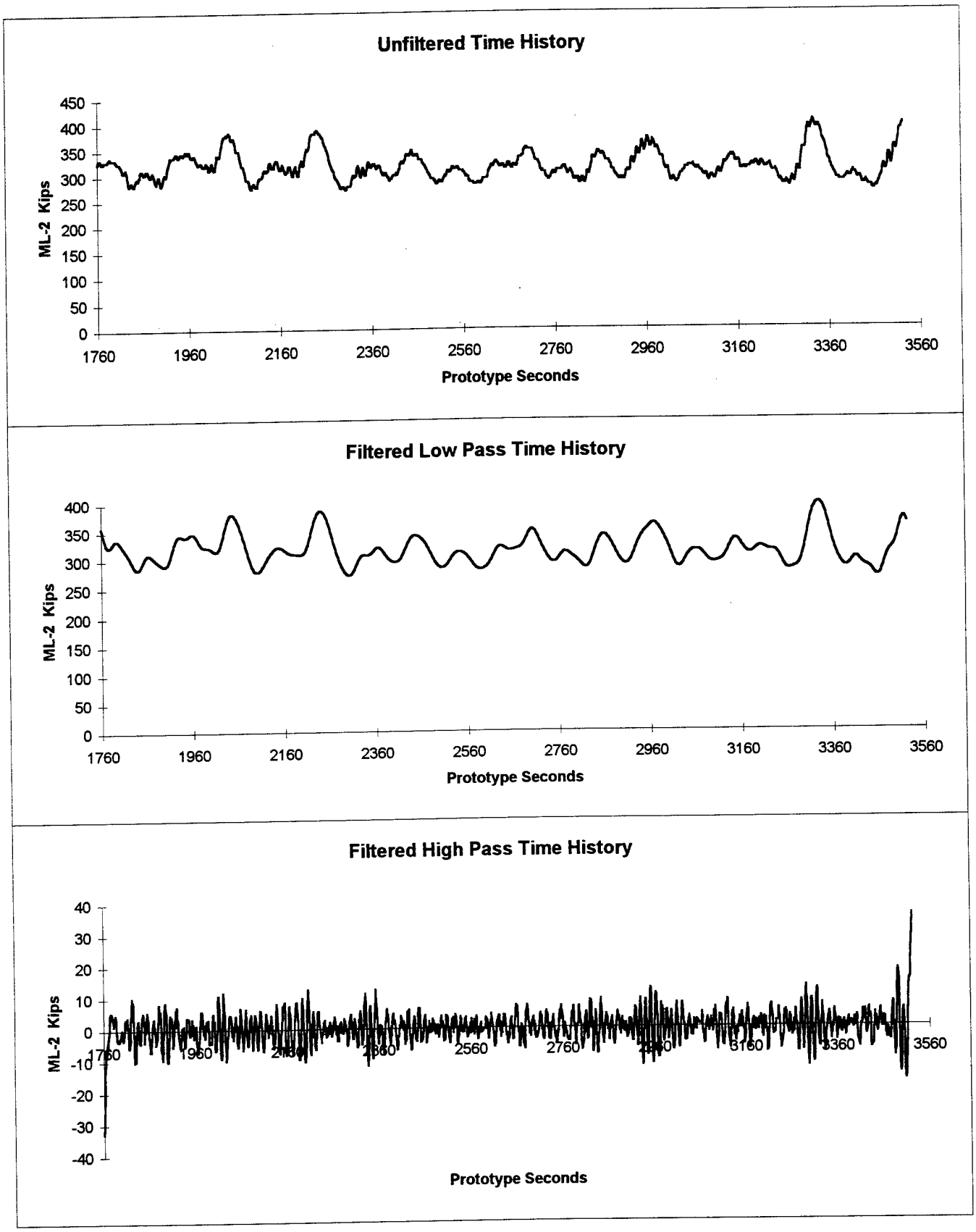

Unfiltered Time History
Buoy-1 Ext Feet
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered Low Pass Time History
Buoy-1 Ext Feet
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
12
512
1012
1512
2012
2512
3012
3512
Prototype Seconds
Filtered High Pass Time History
Buoy-1 Ext Feet
0.2
0.15
0.1
0.05
0
-0.05
-0.1
3512
Prototype Seconds

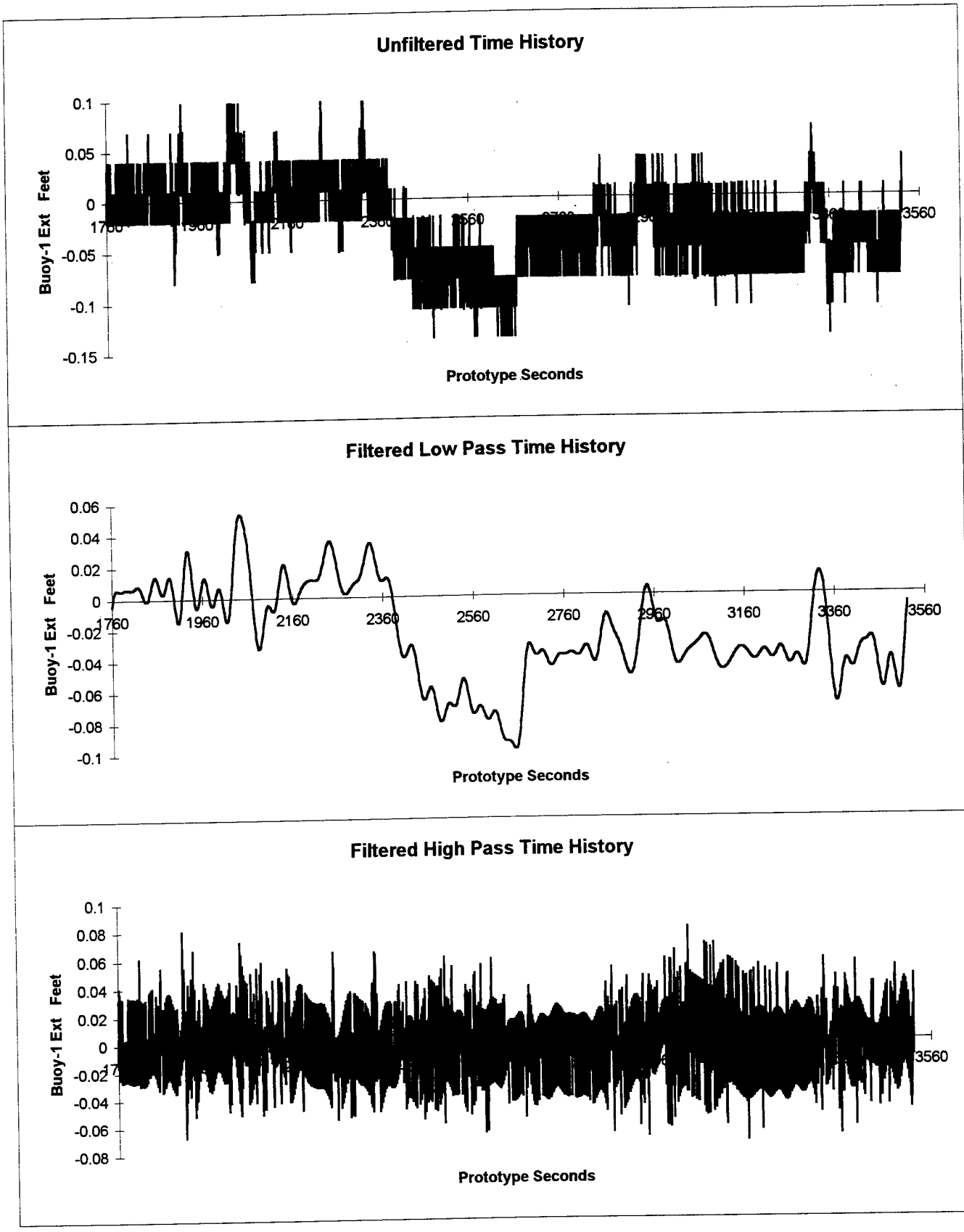

Unfiltered Time History
0
-2
-4
-6
-8
-10
-12
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Pitch Degrees
Prototype Seconds
Filtered Low Pass Time History
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Pitch Degrees
Prototype Seconds
Filtered High Pass Time History
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
3560
Pitch Degrees
Prototype Seconds

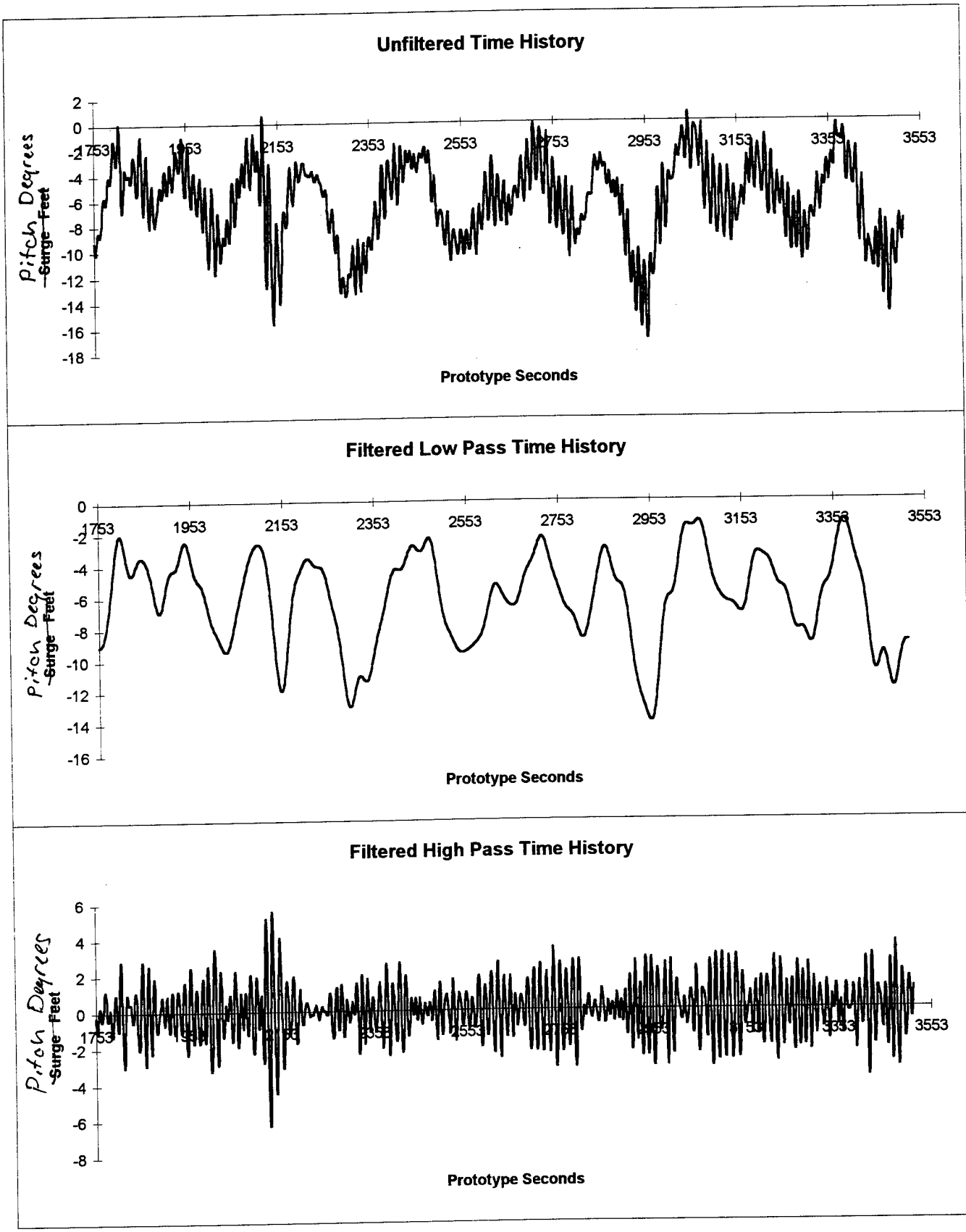

Unfiltered Time History
heave Feet
14
12
10
8
6
4
2
0
-2
-4
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Prototype Seconds
Filtered Low Pass Time History
heave Feet
12
10
8
6
4
2
0
-2
-4
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Prototype Seconds
Filtered High Pass Time History
heave Feet
3
2
1
0
-1
-2
-3
-4
3560
Prototype Seconds

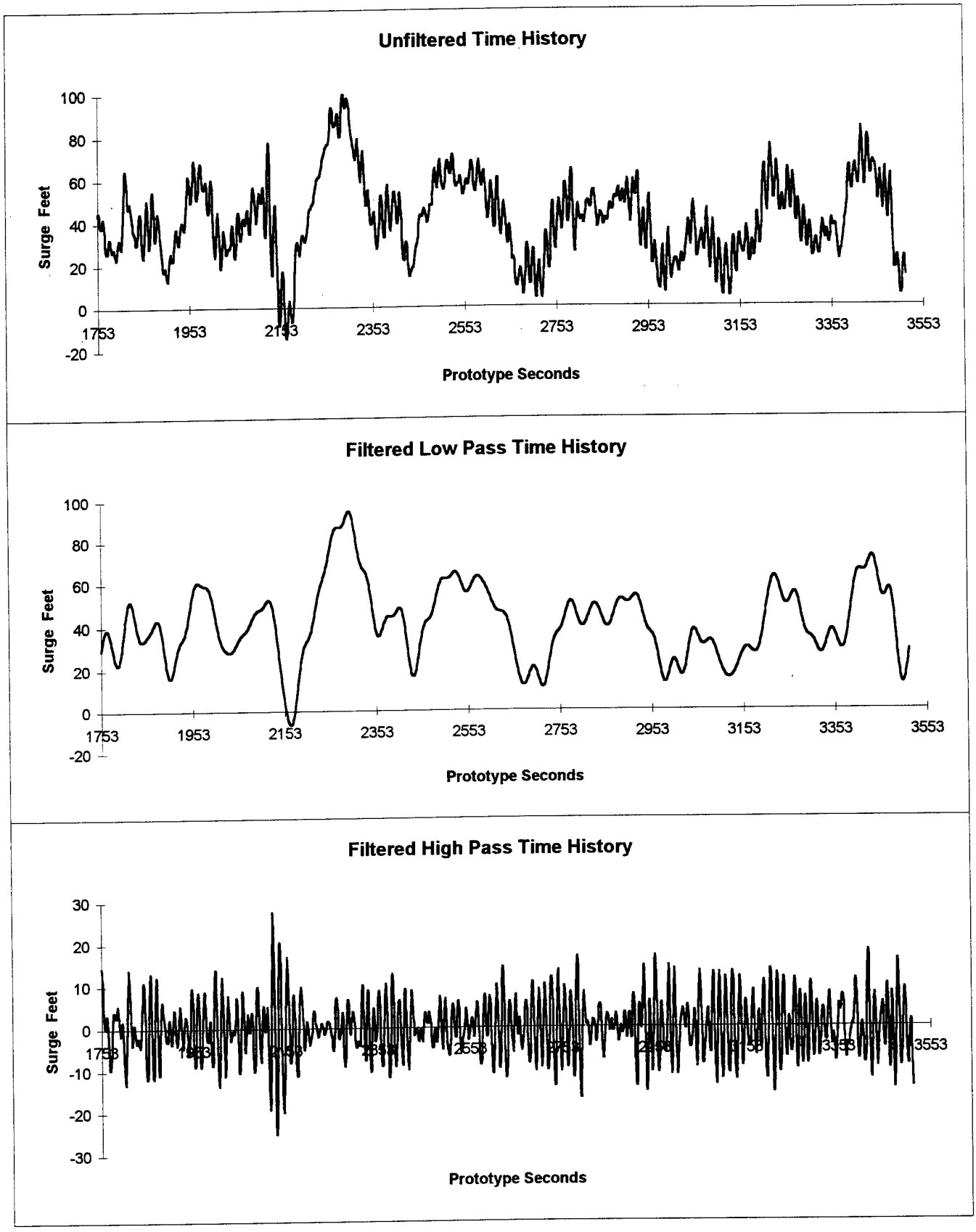

Unfiltered Time History
Surge Feet
90
80
70
60
50
40
30
20
10
0
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
90
80
70
60
50
40
30
20
10
0
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Prototype Seconds
Filtered High Pass Time History
Surge Feet
15
10
5
0
-5
-10
-15
3560
Prototype Seconds

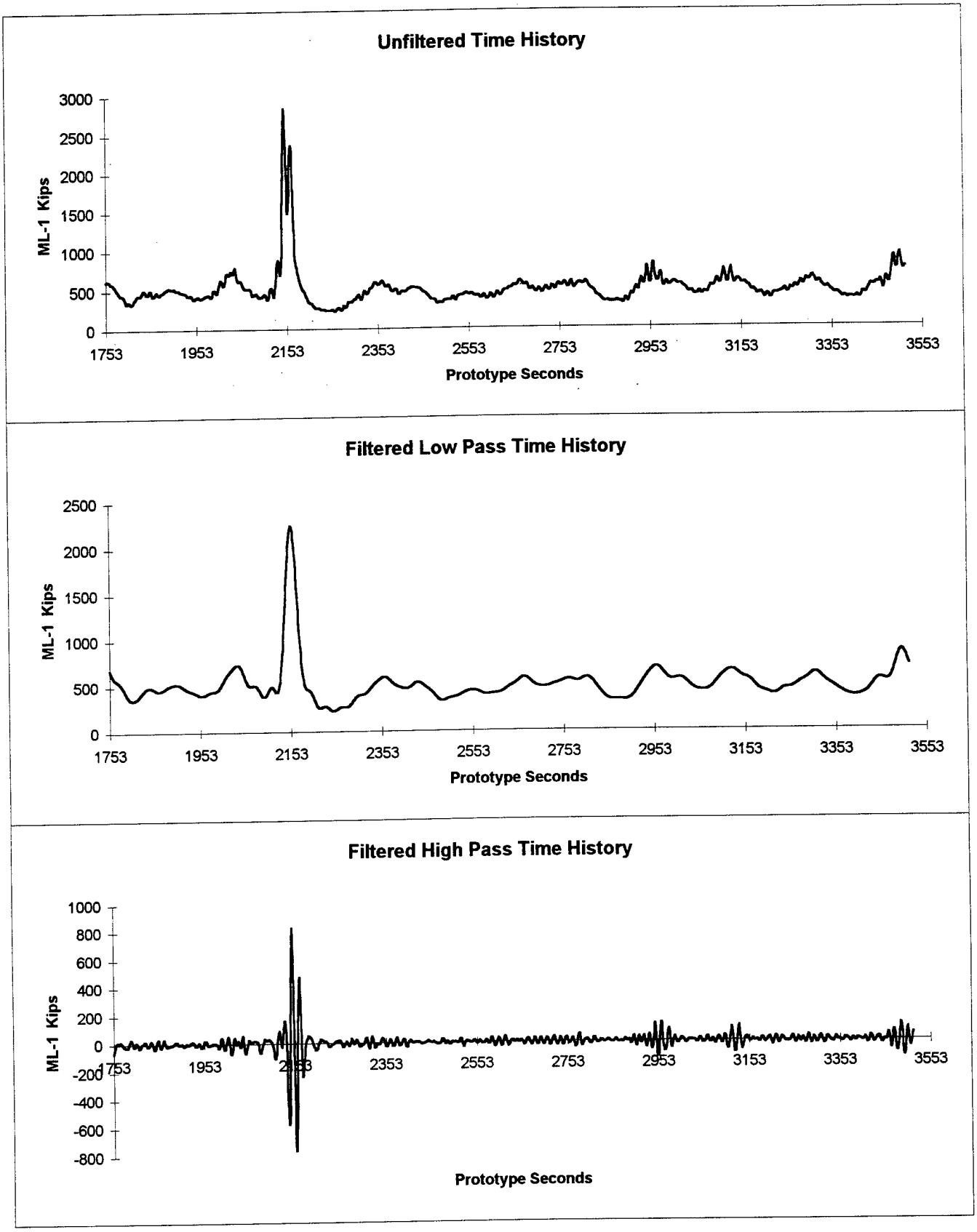

Unfiltered Time History
ML-1 Kips
600
500
400
300
200
100
0
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
600
500
400
300
200
100
0
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
80
60
40
20
0
-20
-40
-60
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Prototype Seconds

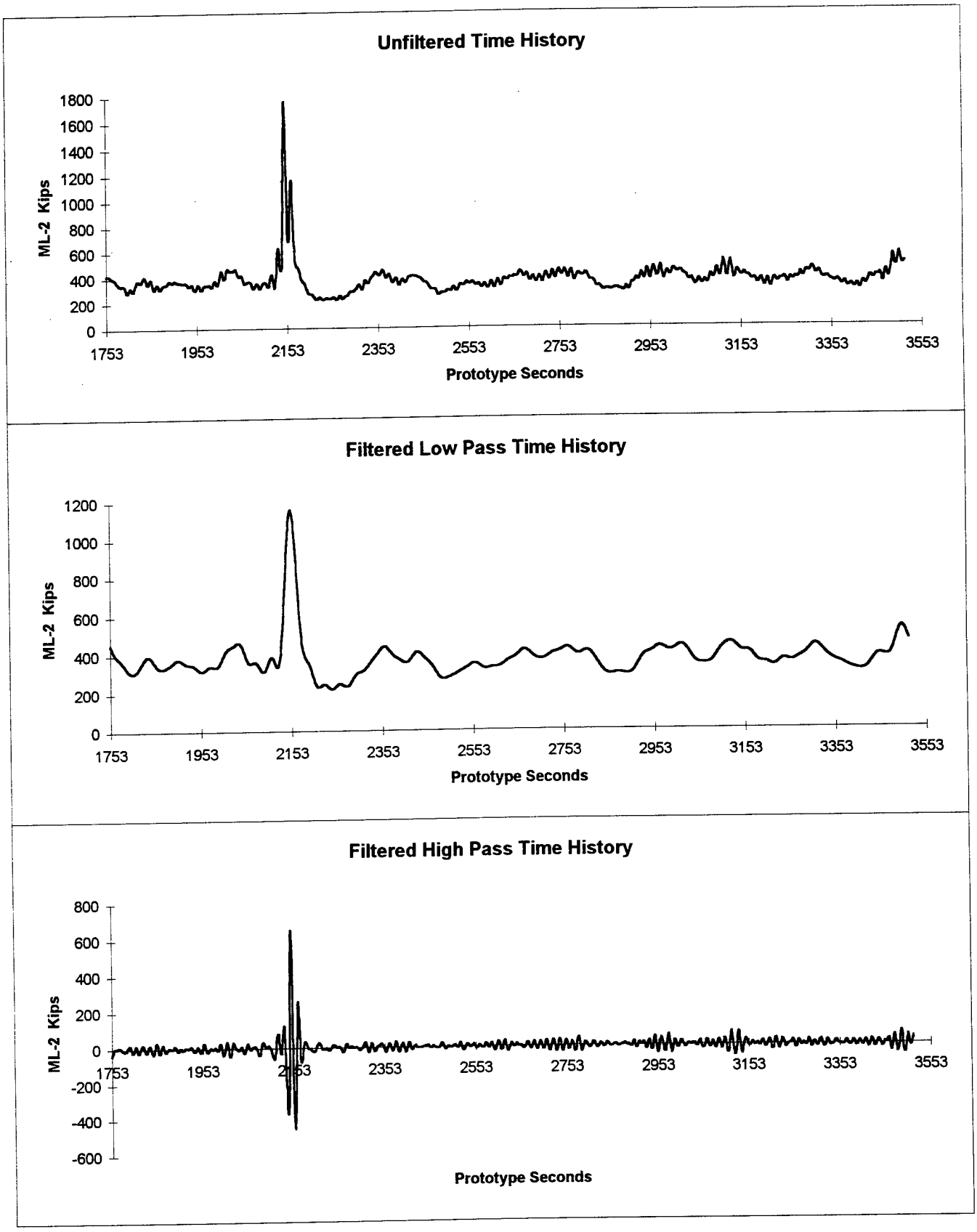

Unfiltered Time History
ML-2 Kips
450
400
350
300
250
200
150
100
50
0
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
400
350
300
250
200
150
100
50
0
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
40
30
20
10
0
-10
-20
-30
-40
1760
1960
2560
2760
3160
3360
3560
Prototype Seconds

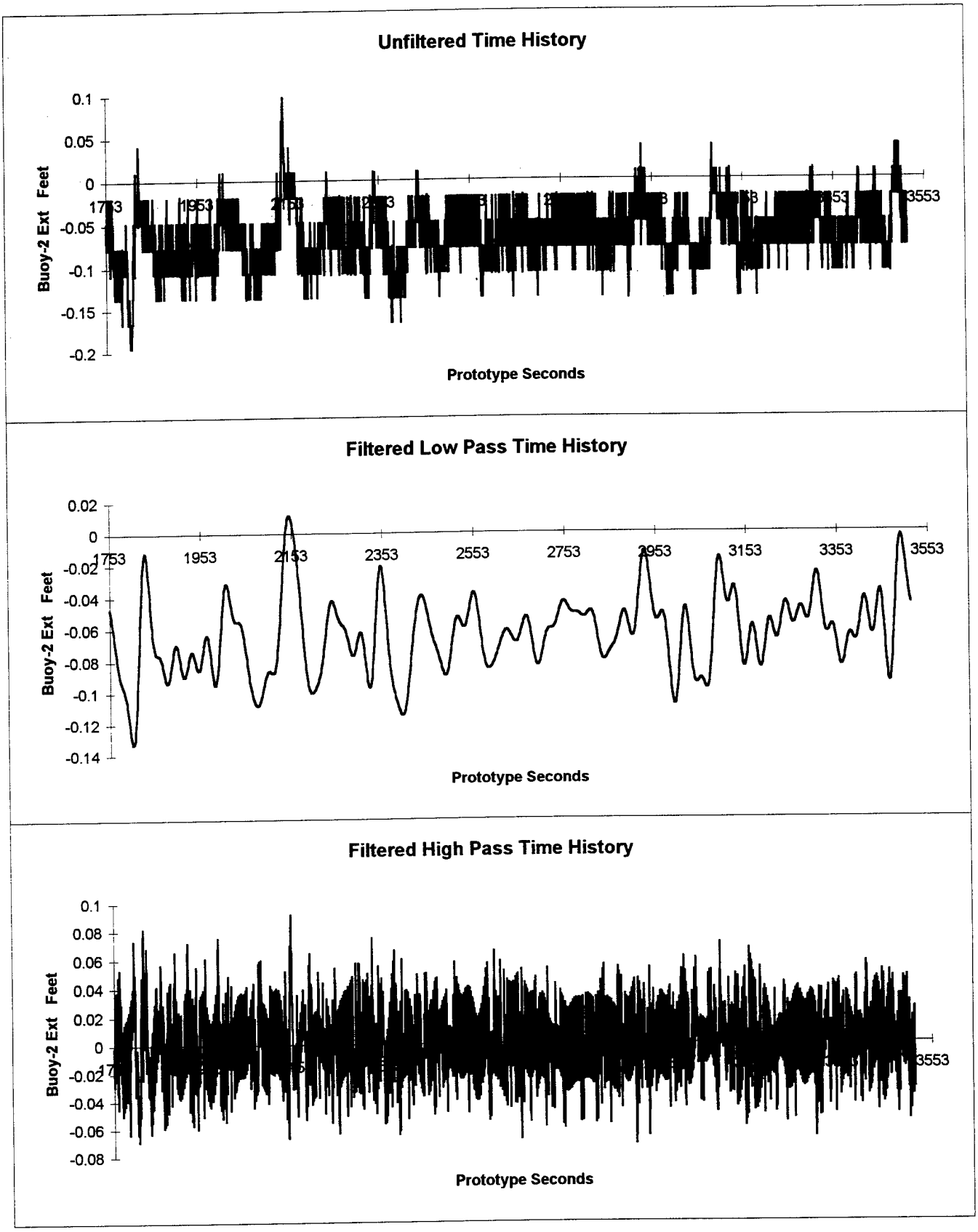

Unfiltered Time History
Buoy-1 Ext Feet
0.1
0.05
0
-0.05
-0.1
-0.15
3560
Prototype Seconds
Filtered Low Pass Time History
Buoy-1 Ext Feet
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
1760
1960
2160
2360
2560
2760
2960
3160
3360
3560
Prototype Seconds
Filtered High Pass Time History
Buoy-1 Ext Feet
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
3560
Prototype Seconds

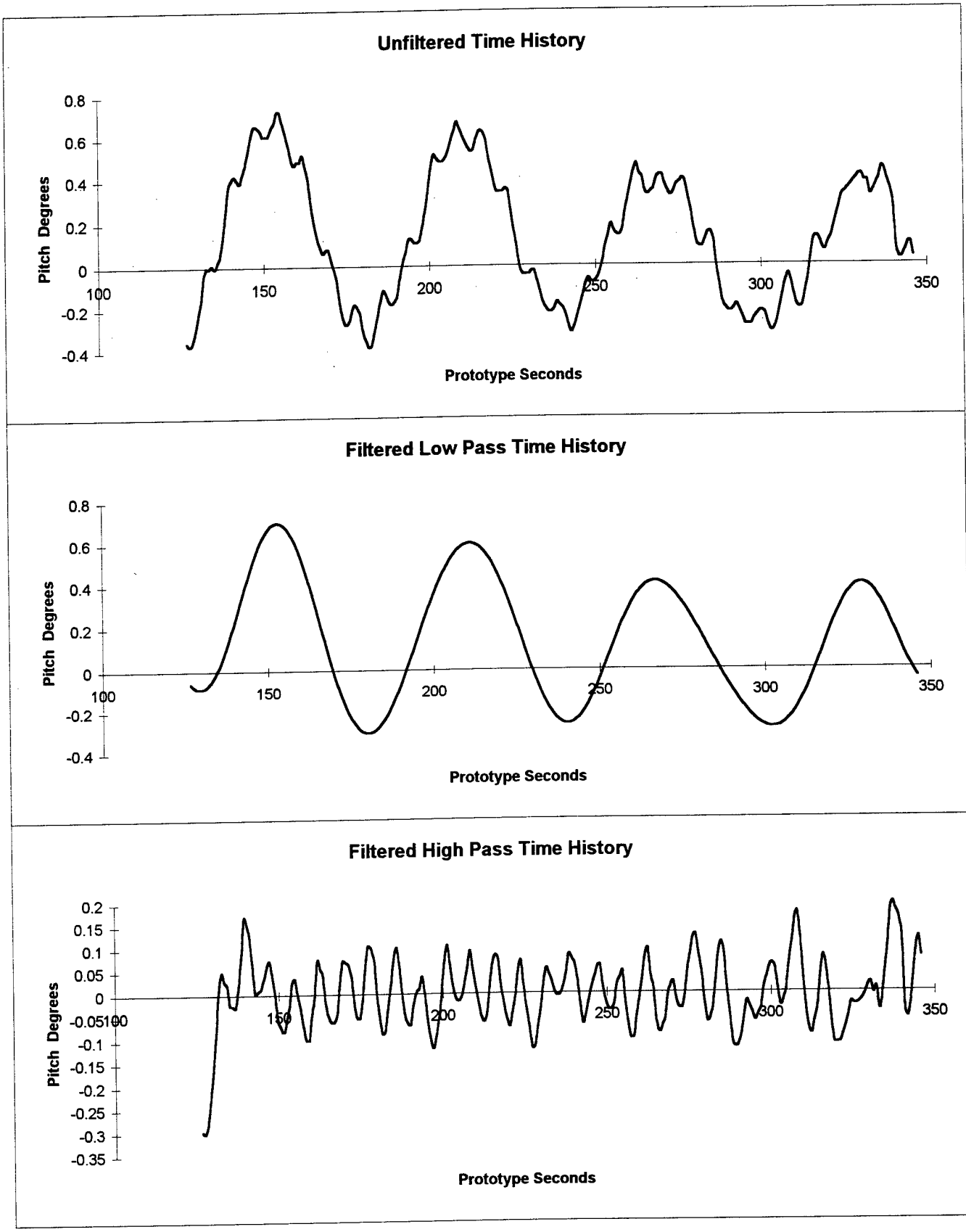

Unfiltered Time History
Pitch Degrees
Surge Feet
2
0
-2
-4
-6
-8
-10
-12
-14
-16
-18
1753
1953
2153
2353
2553
2753
2953
3153
3353
3553
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
Surge Feet
0
-2
-4
-6
-8
-10
-12
-14
-16
1753
1953
2153
2353
2553
2753
2953
3153
3353
3553
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
Surge Feet
6
4
2
0
-2
-4
-6
-8
1753
3553
Prototype Seconds

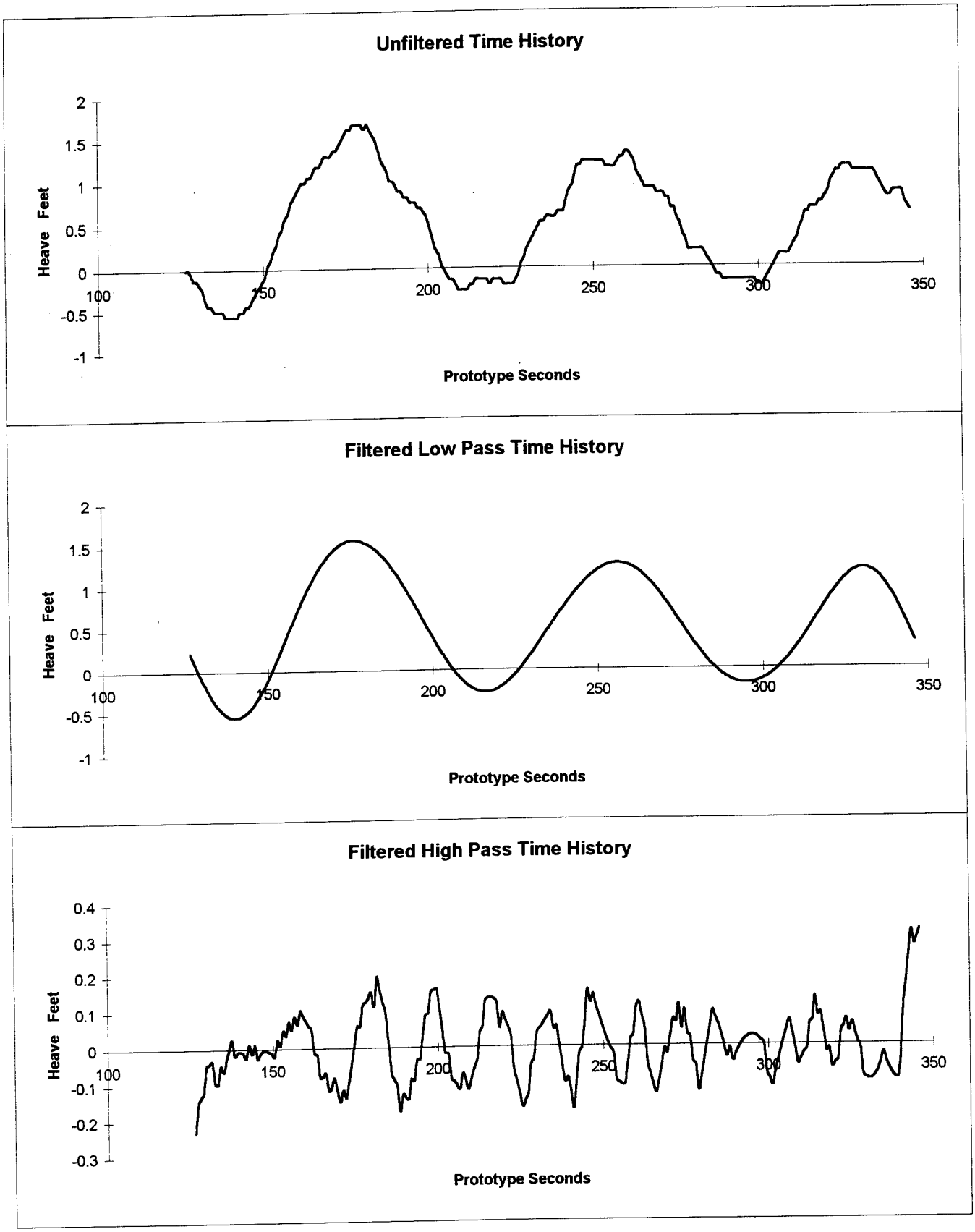

Unfiltered Time History
Surge Feet
100
80
60
40
20
0
-20
1753
1953
2153
2353
2553
2753
2953
3153
3353
3553
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
100
80
60
40
20
0
-20
1753
1953
2153
2353
2553
2753
2953
3153
3353
3553
Prototype Seconds
Filtered High Pass Time History
Surge Feet
30
20
10
0
-10
-20
-30
1753
3553
Prototype Seconds

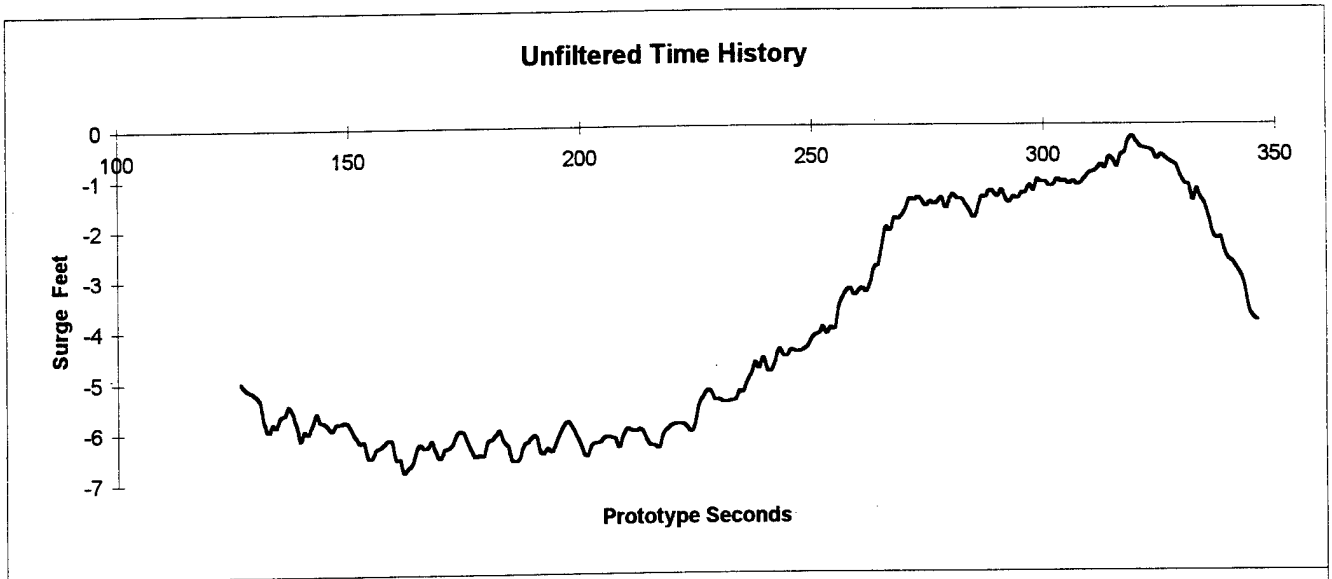

Unfiltered Time History
ML-1 Kips
3000
2500
2000
1500
1000
500
0
1753
1953
2153
2353
2553
2753
2953
3153
3353
3553
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
2500
2000
1500
1000
500
0
1753
1953
2153
2353
2553
2753
2953
3153
3353
3553
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
1000
800
600
400
200
0
-200
-400
-600
-800
1753
1953
2353
2553
2753
2953
3153
3353
3553
Prototype Seconds

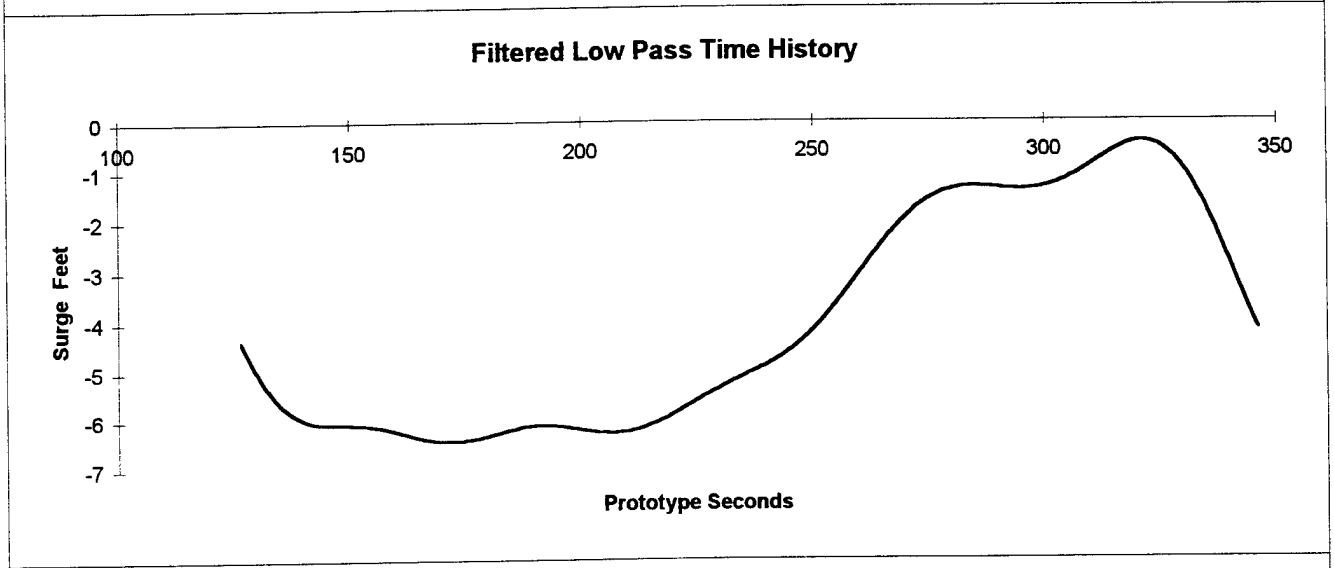

Unfiltered Time History
ML-2 Kips
1800
1600
1400
1200
1000
800
600
400
200
0
1753
1953
2153
2353
2553
2753
2953
3153
3353
3553
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
1200
1000
800
600
400
200
0
1753
1953
2153
2353
2553
2753
2953
3153
3353
3553
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
800
600
400
200
0
-200
-400
-600
1753
1953
2153
2353
2553
2753
2953
3153
3353
3553
Prototype Seconds

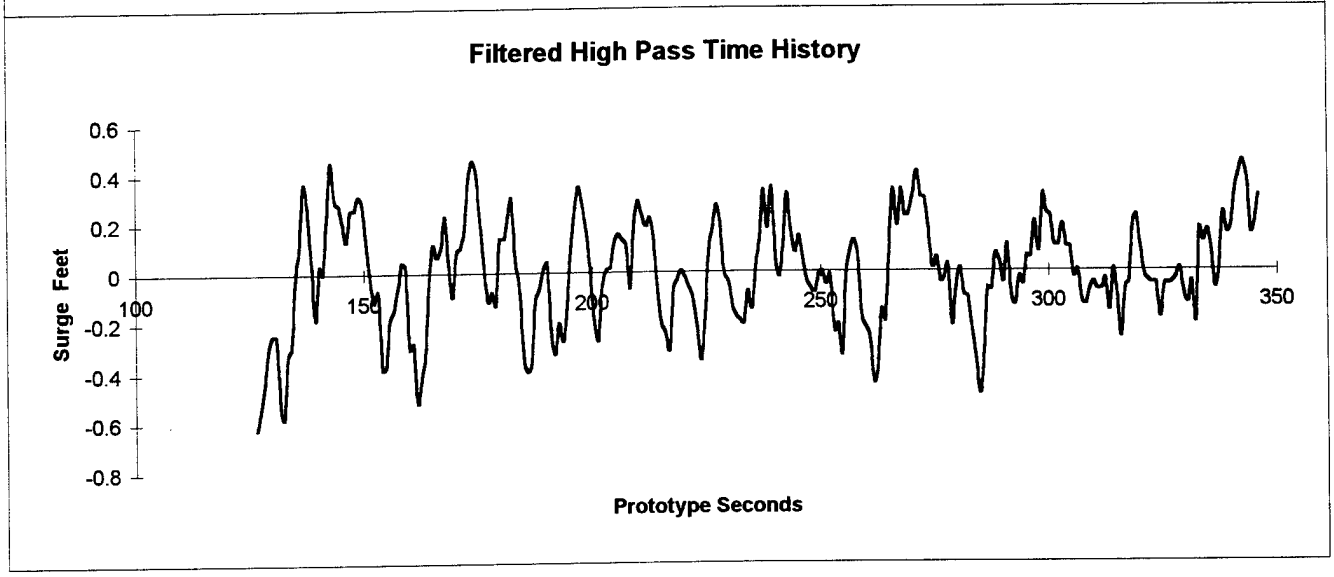

Unfiltered Time History
Buoy-2 Ext Feet
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
1753
1953
3553
Prototype Seconds
Filtered Low Pass Time History
Buoy-2 Ext Feet
0.02
0
-0.02
-0.04
-0.06
-0.08
-0.1
-0.12
-0.14
1753
1953
2153
2353
2553
2753
2953
3153
3353
3553
Prototype Seconds
Filtered High Pass Time History
Buoy-2 Ext Feet
0.1
0.08
0.06
0.04
0.02
0
-0.02
-0.04
-0.06
-0.08
3553
Prototype Seconds

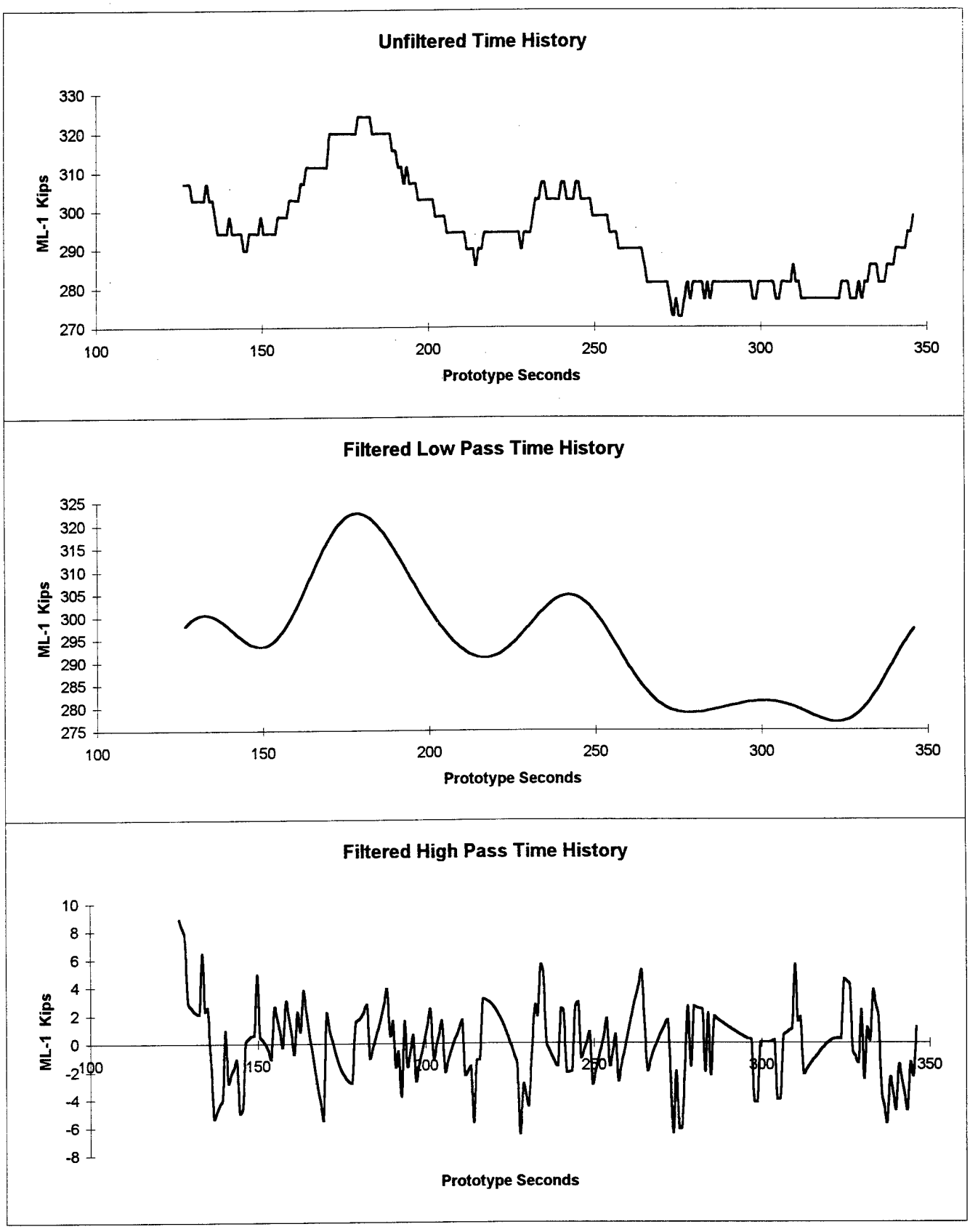

Unfiltered Time History
Pitch Degrees
0.8
0.6
0.4
0.2
0
-0.2
-0.4
100
150
200
250
300
350
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
0.8
0.6
0.4
0.2
0
-0.2
-0.4
100
150
200
250
300
350
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
0.2
0.15
0.1
0.05
0
-0.05
-0.1
-0.15
-0.2
-0.25
-0.3
-0.35
100
150
200
250
300
350
Prototype Seconds

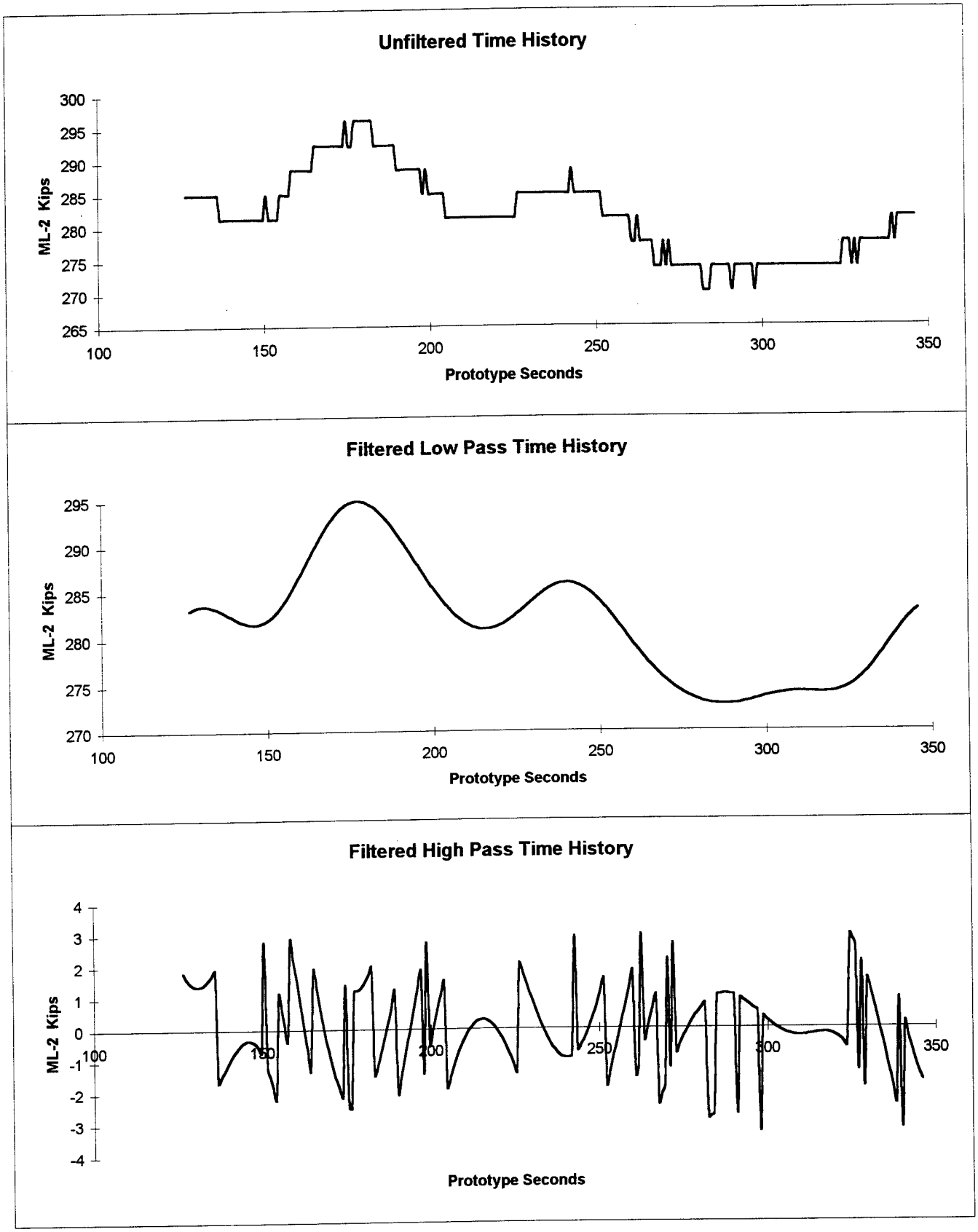

Unfiltered Time History
Heave Feet
2
1.5
1
0.5
0
-0.5
-1
100
150
200
250
300
350
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
2
1.5
1
0.5
0
-0.5
-1
100
150
200
250
300
350
Prototype Seconds
Filtered High Pass Time History
Heave Feet
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
100
150
200
250
300
350
Prototype Seconds

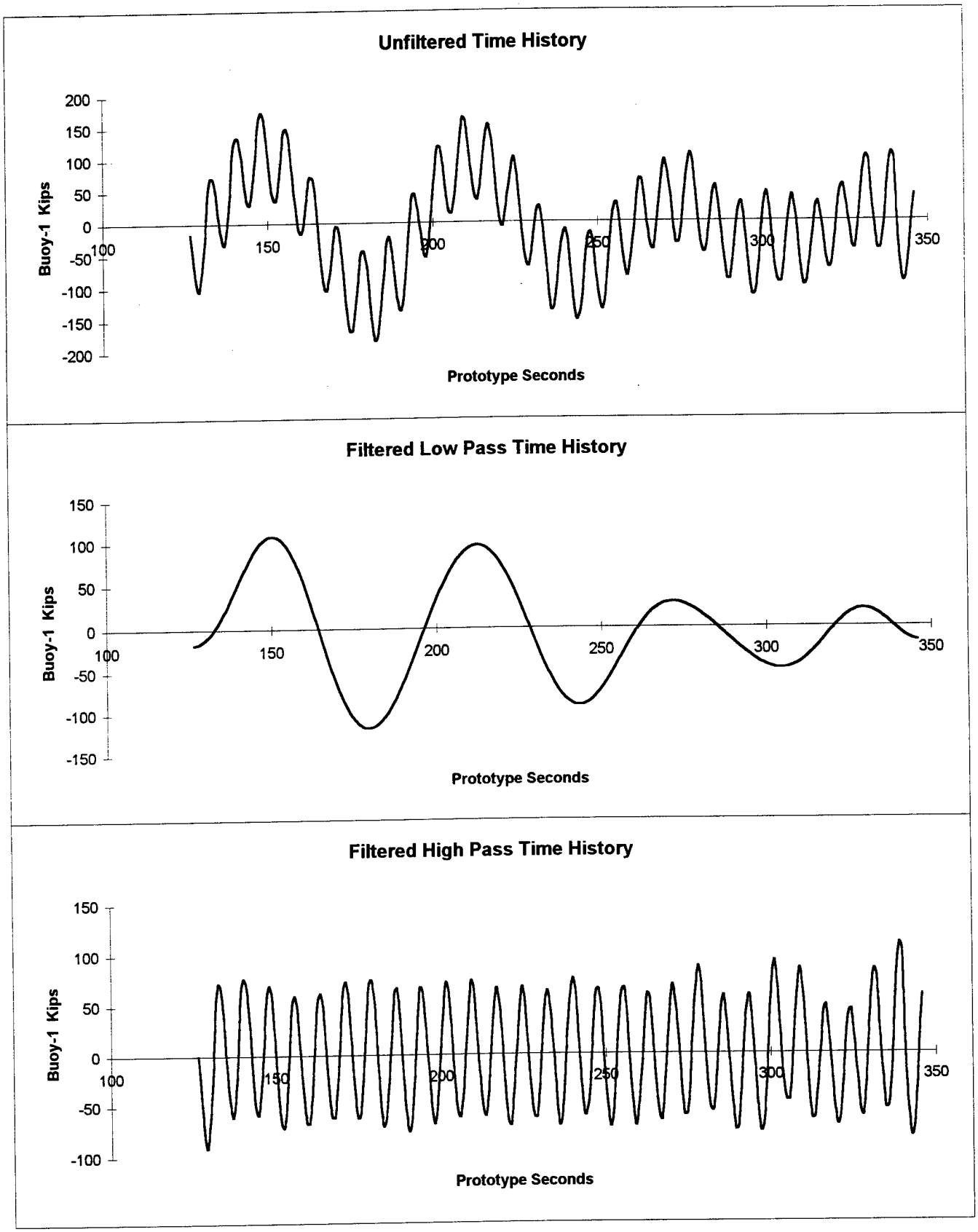

Unfiltered Time History
0
-1
-2
-3
-4
-5
-6
-7
100
150
200
250
300
350
Surge Feet
Prototype Seconds

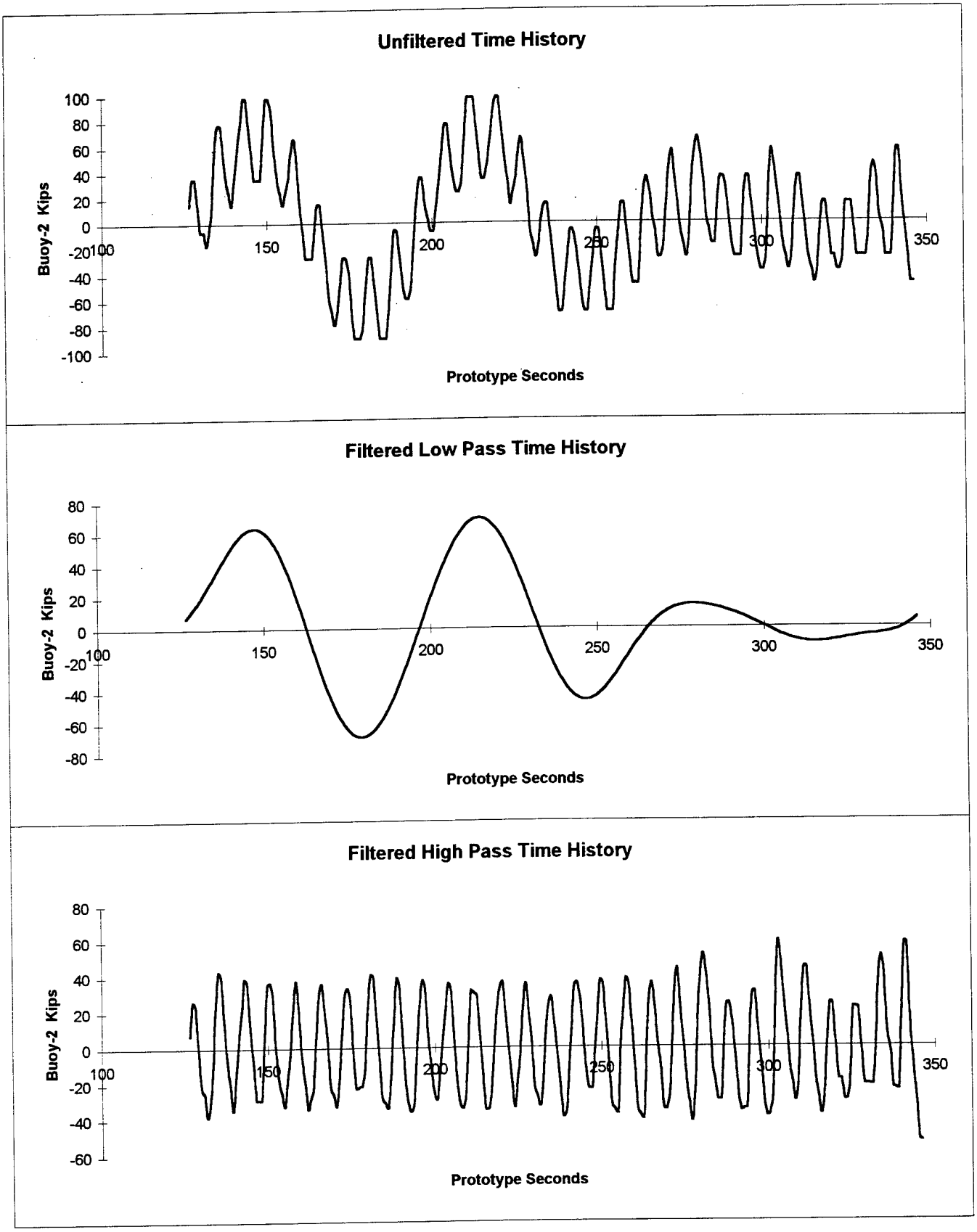

Filtered Low Pass Time History
0
-1
-2
-3
-4
-5
-6
-7
100
150
200
250
300
350
Surge Feet
Prototype Seconds

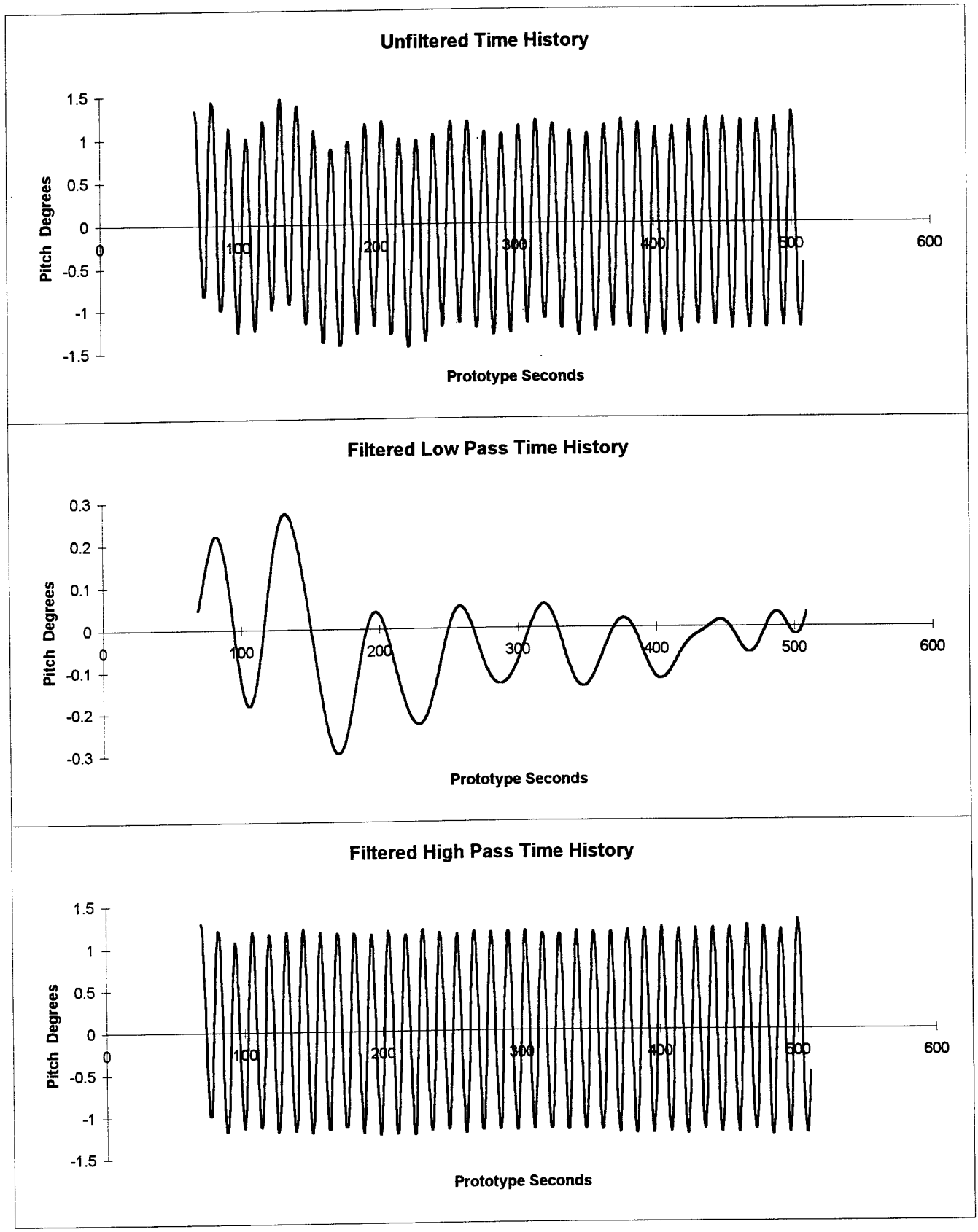

Filtered High Pass Time History
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
100
150
200
250
300
350
Surge Feet
Prototype Seconds

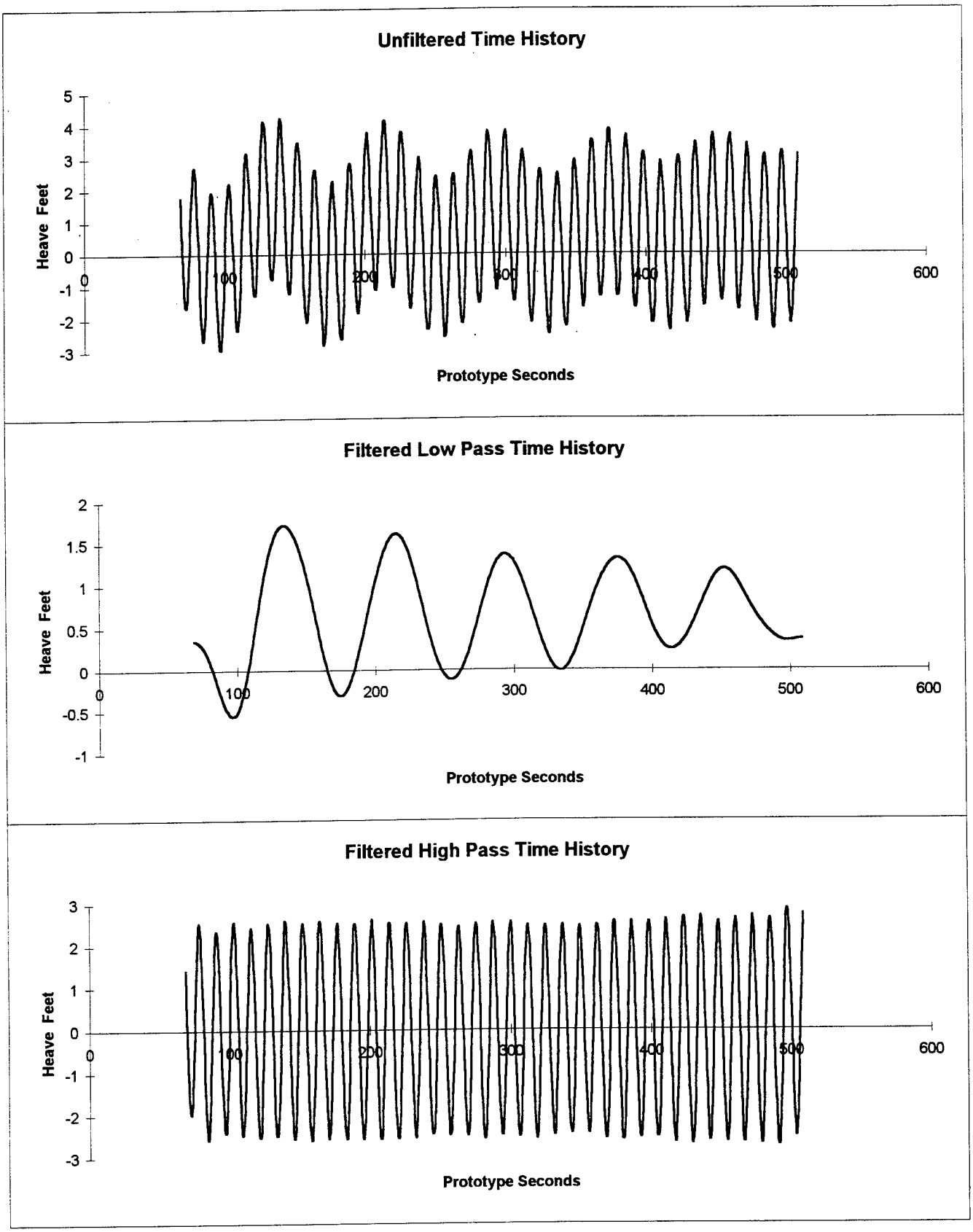

Unfiltered Time History
ML-1 Kips
330
320
310
300
290
280
270
100
150
200
250
300
350
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
325
320
315
310
305
300
295
290
285
280
275
100
150
200
250
300
350
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
10
8
6
4
2
0
-2
-4
-6
-8
100
150
200
250
300
350
Prototype Seconds

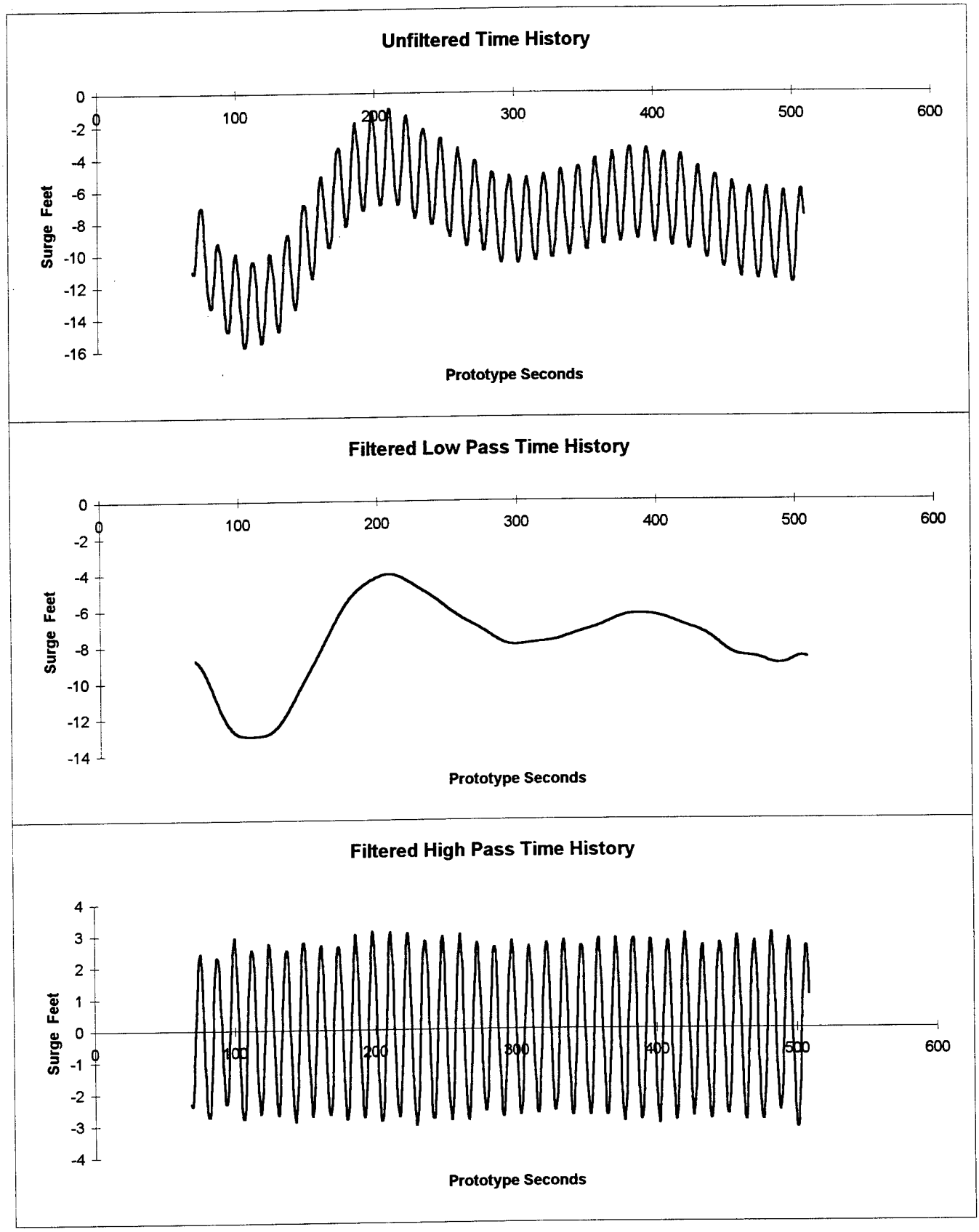

Unfiltered Time History
ML-2 Kips
300
295
290
285
280
275
270
265
100
150
200
250
300
350
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
295
290
285
280
275
270
100
150
200
250
300
350
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
4
3
2
1
0
-1
-2
-3
-4
100
150
200
250
300
350
Prototype Seconds

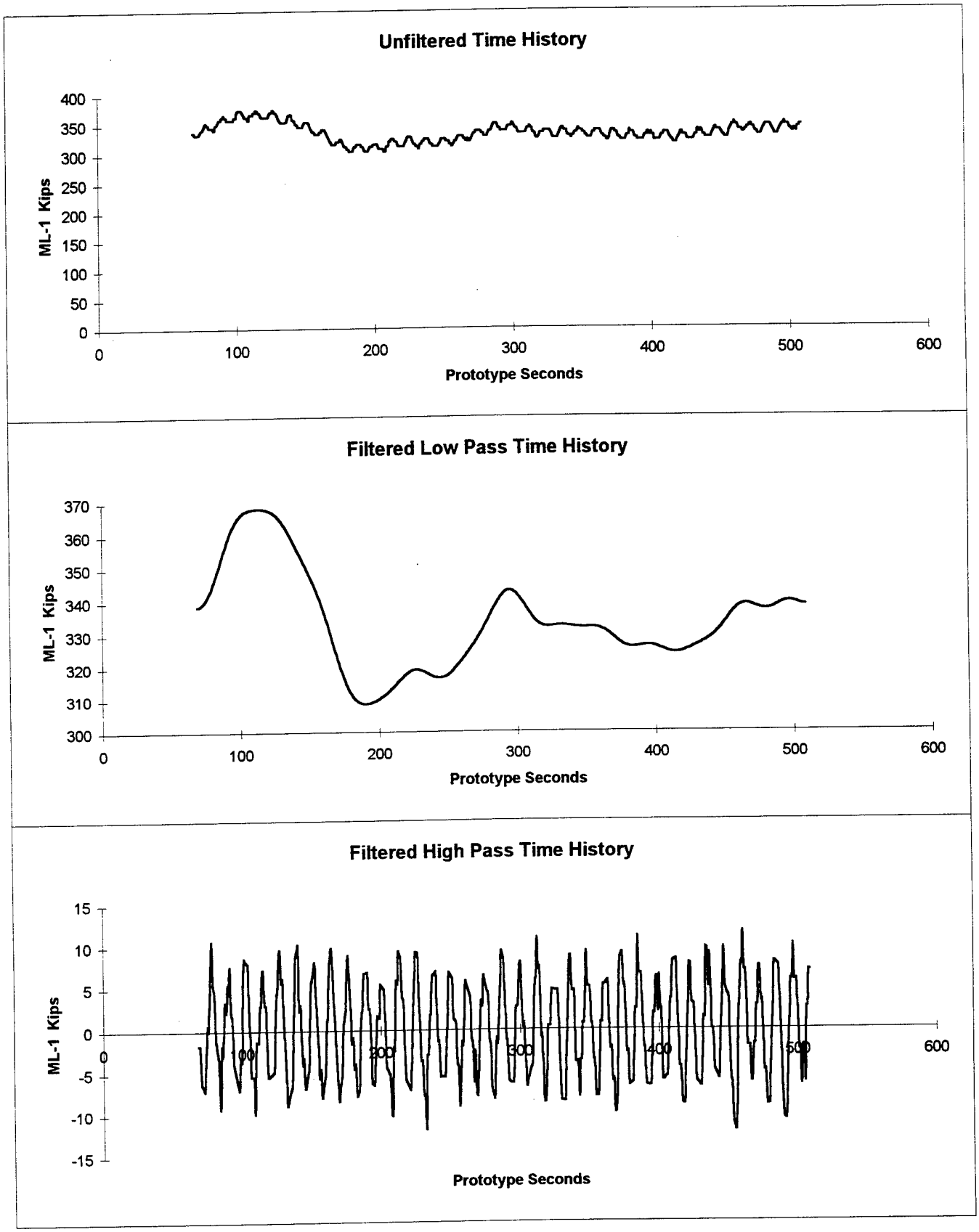

Unfiltered Time History
Buoy-1 Kips
200
150
100
50
0
-50
-100
-150
-200
100
150
200
250
300
350
Prototype Seconds
Filtered Low Pass Time History
Buoy-1 Kips
150
100
50
0
-50
-100
-150
100
150
200
250
300
350
Prototype Seconds
Filtered High Pass Time History
Buoy-1 Kips
150
100
50
0
-50
-100
100
150
200
250
300
350
Prototype Seconds

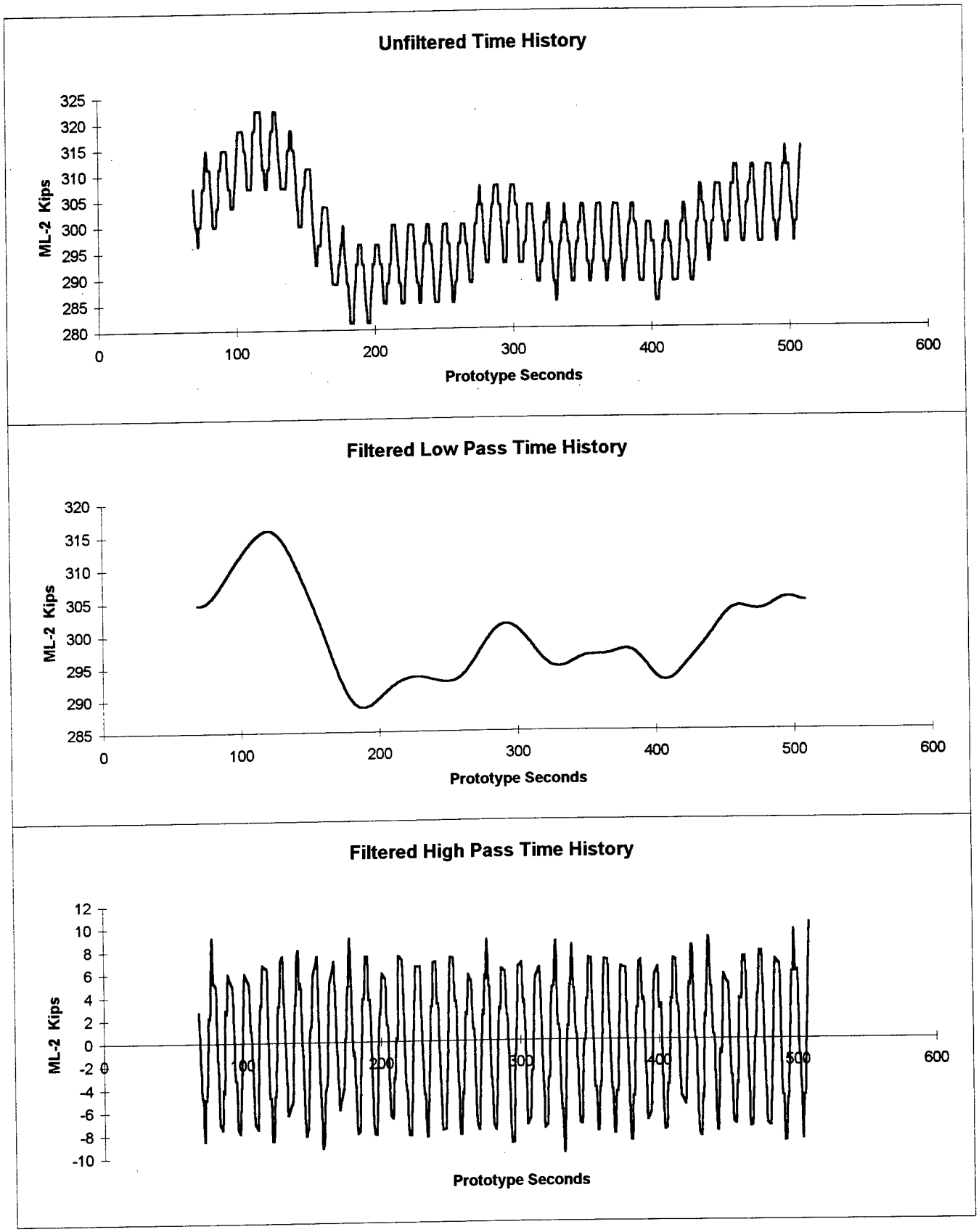

Unfiltered Time History
Buoy-2 Kips
100
80
60
40
20
0
-20
-40
-60
-80
-100
100
150
200
250
300
350
Prototype Seconds
Filtered Low Pass Time History
Buoy-2 Kips
80
60
40
20
0
-20
-40
-60
-80
100
150
200
250
300
350
Prototype Seconds
Filtered High Pass Time History
Buoy-2 Kips
80
60
40
20
0
-20
-40
-60
100
150
200
250
300
350
Prototype Seconds

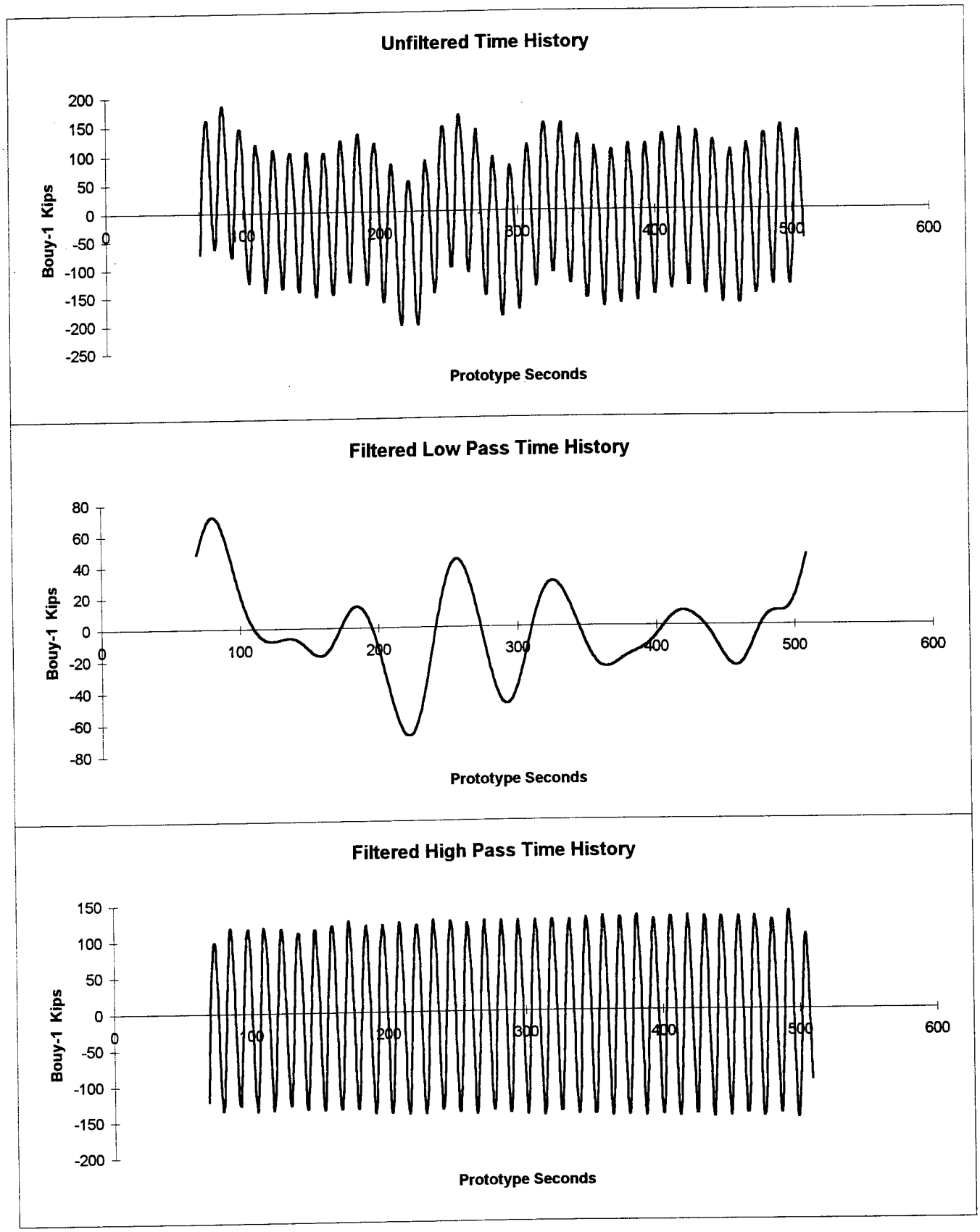

Unfiltered Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
0
100
200
300
400
500
600
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
0
100
200
300
400
500
600
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
0
100
200
300
400
500
600
Prototype Seconds

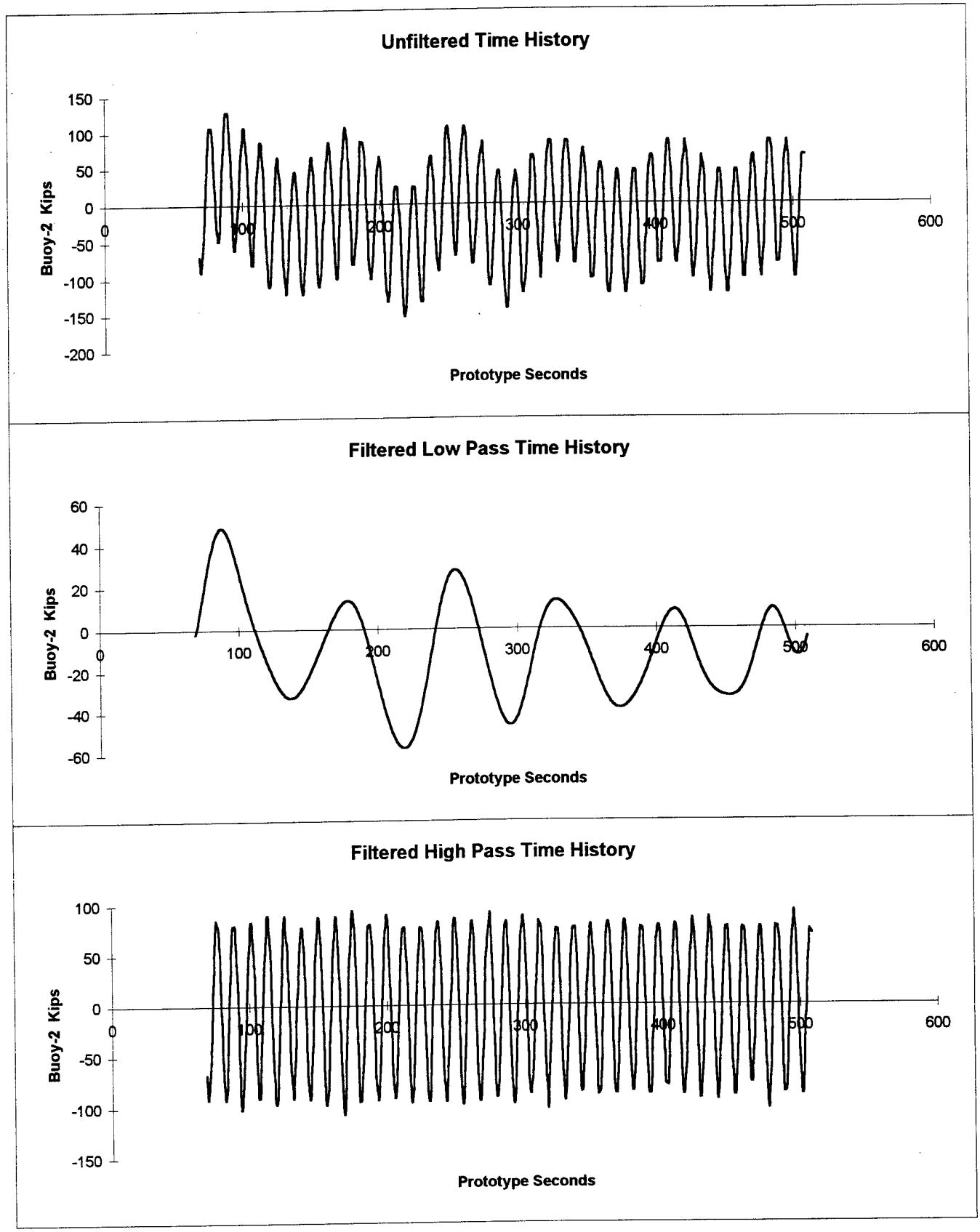

Unfiltered Time History
Heave Feet
5
4
3
2
1
0
-1
-2
-3
0
100
200
300
400
500
600
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
2
1.5
1
0.5
0
-0.5
-1
0
100
200
300
400
500
600
Prototype Seconds
Filtered High Pass Time History
Heave Feet
3
2
1
0
-1
-2
-3
0
100
200
300
400
500
600
Prototype Seconds

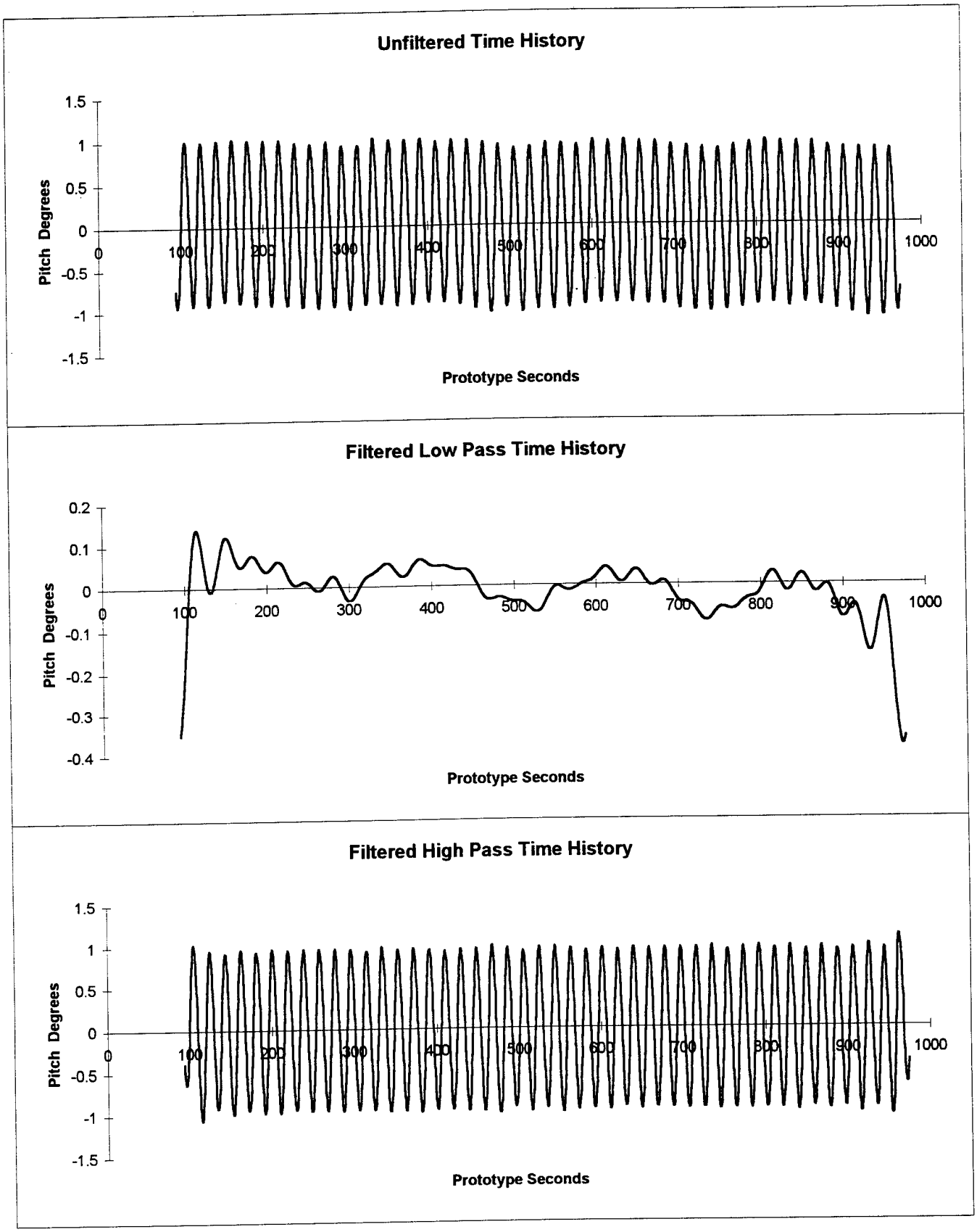

Unfiltered Time History
Surge Feet
0
-2
-4
-6
-8
-10
-12
-14
-16
0
100
200
300
400
500
600
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
0
-2
-4
-6
-8
-10
-12
-14
0
100
200
300
400
500
600
Prototype Seconds
Filtered High Pass Time History
Surge Feet
4
3
2
1
0
-1
-2
-3
-4
0
100
200
300
400
500
600
Prototype Seconds

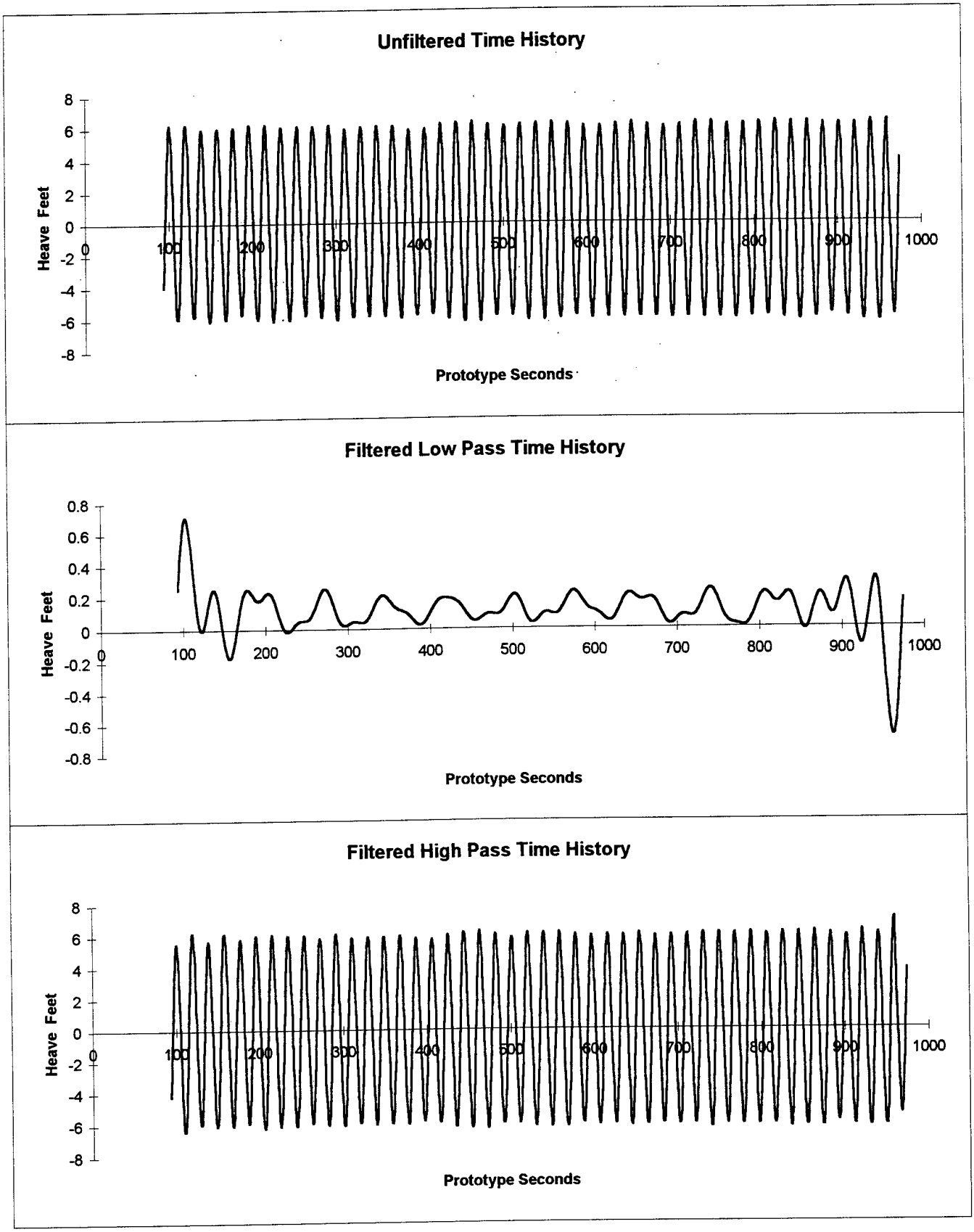

Unfiltered Time History
ML-1 Kips
400
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
370
360
350
340
330
320
310
300
0
100
200
300
400
500
600
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
15
10
5
0
-5
-10
-15
0
600
Prototype Seconds

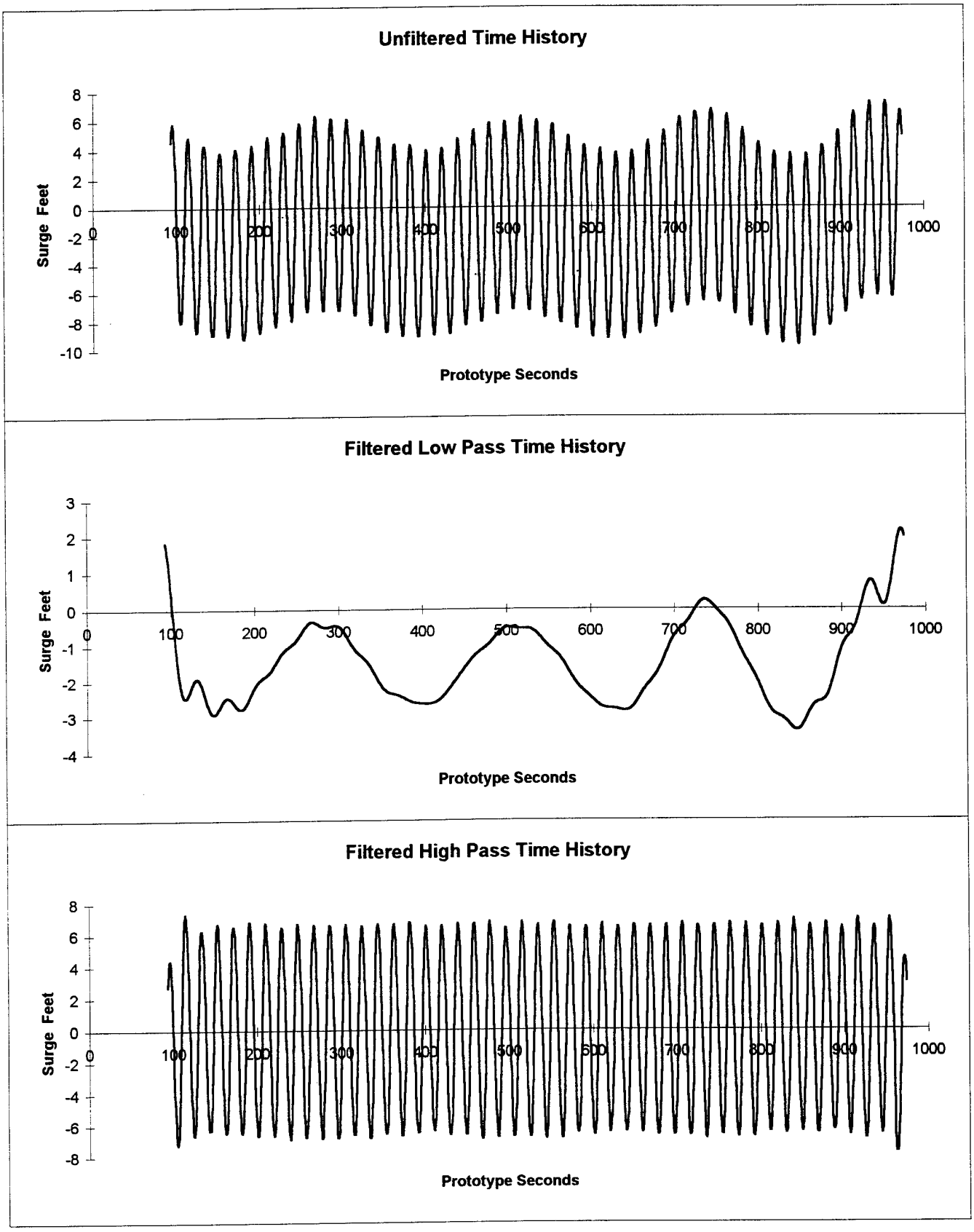

Unfiltered Time History
ML-2 Kips
325
320
315
310
305
300
295
290
285
280
0
100
200
300
400
500
600
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
320
315
310
305
300
295
290
285
0
100
200
300
400
500
600
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
0
100
200
300
400
500
600
Prototype Seconds

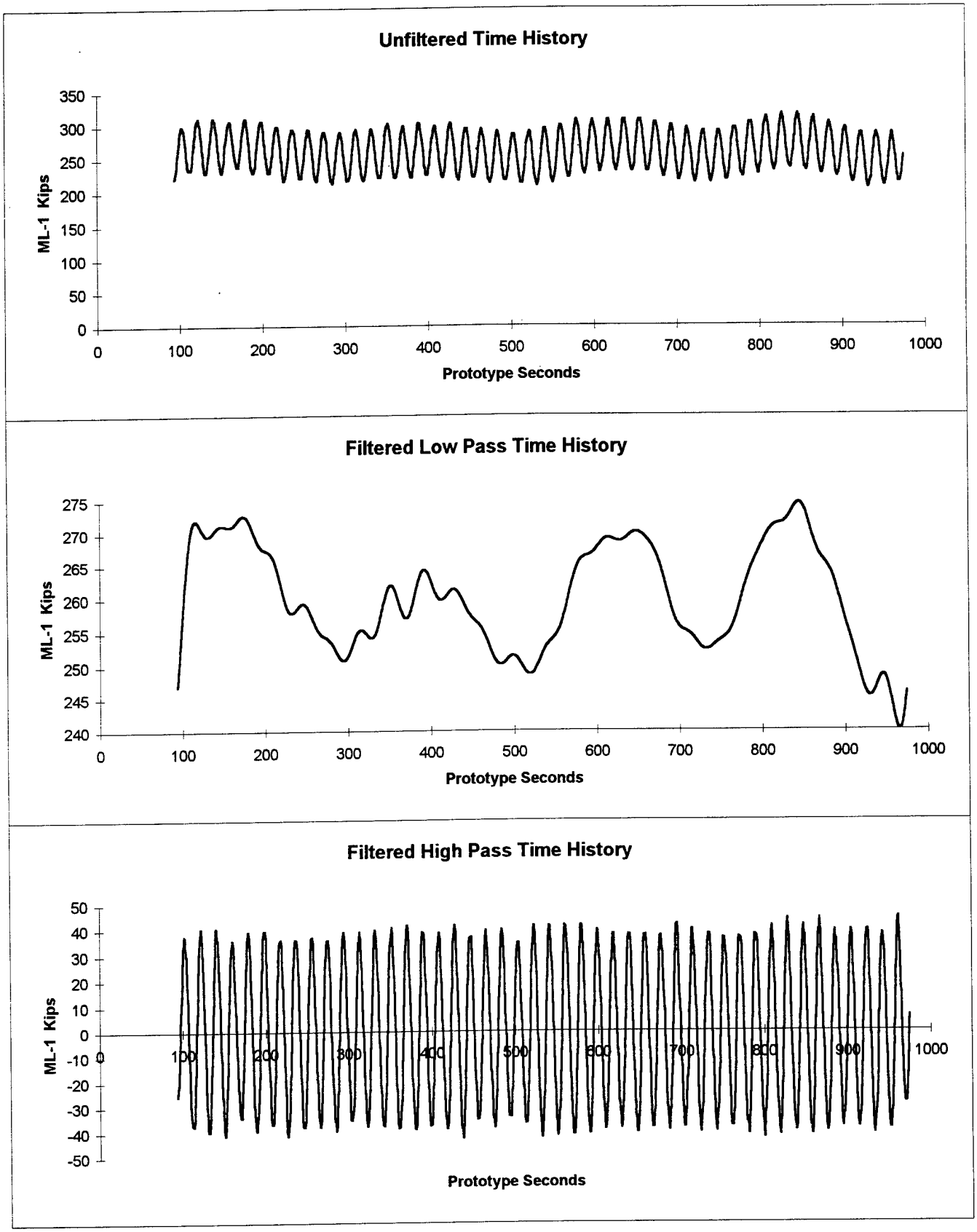

Unfiltered Time History
Bouy-1 Kips
200
150
100
50
0
-50
-100
-150
-200
-250
0
100
200
300
400
500
600
Prototype Seconds
Filtered Low Pass Time History
Bouy-1 Kips
80
60
40
20
0
-20
-40
-60
-80
0
100
200
300
400
500
600
Prototype Seconds
Filtered High Pass Time History
Bouy-1 Kips
150
100
50
0
-50
-100
-150
-200
0
100
200
300
400
500
600
Prototype Seconds

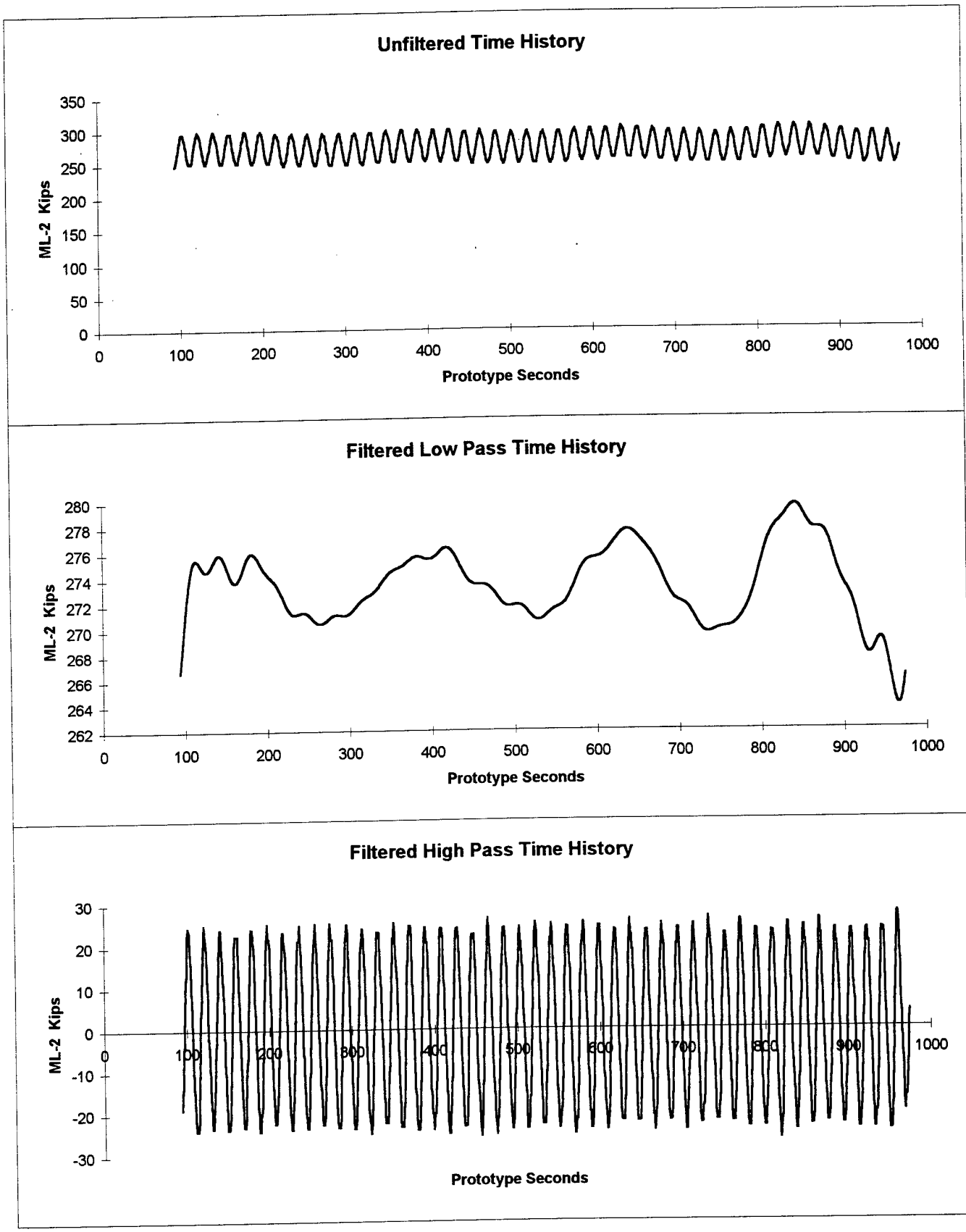

Unfiltered Time History
Buoy-2 Kips
150
100
50
0
-50
-100
-150
-200
0
100
200
300
400
500
600
Prototype Seconds
Filtered Low Pass Time History
Buoy-2 Kips
60
40
20
0
-20
-40
-60
0
100
200
300
400
500
600
Prototype Seconds
Filtered High Pass Time History
Buoy-2 Kips
100
50
0
-50
-100
-150
0
100
200
300
400
500
600
Prototype Seconds

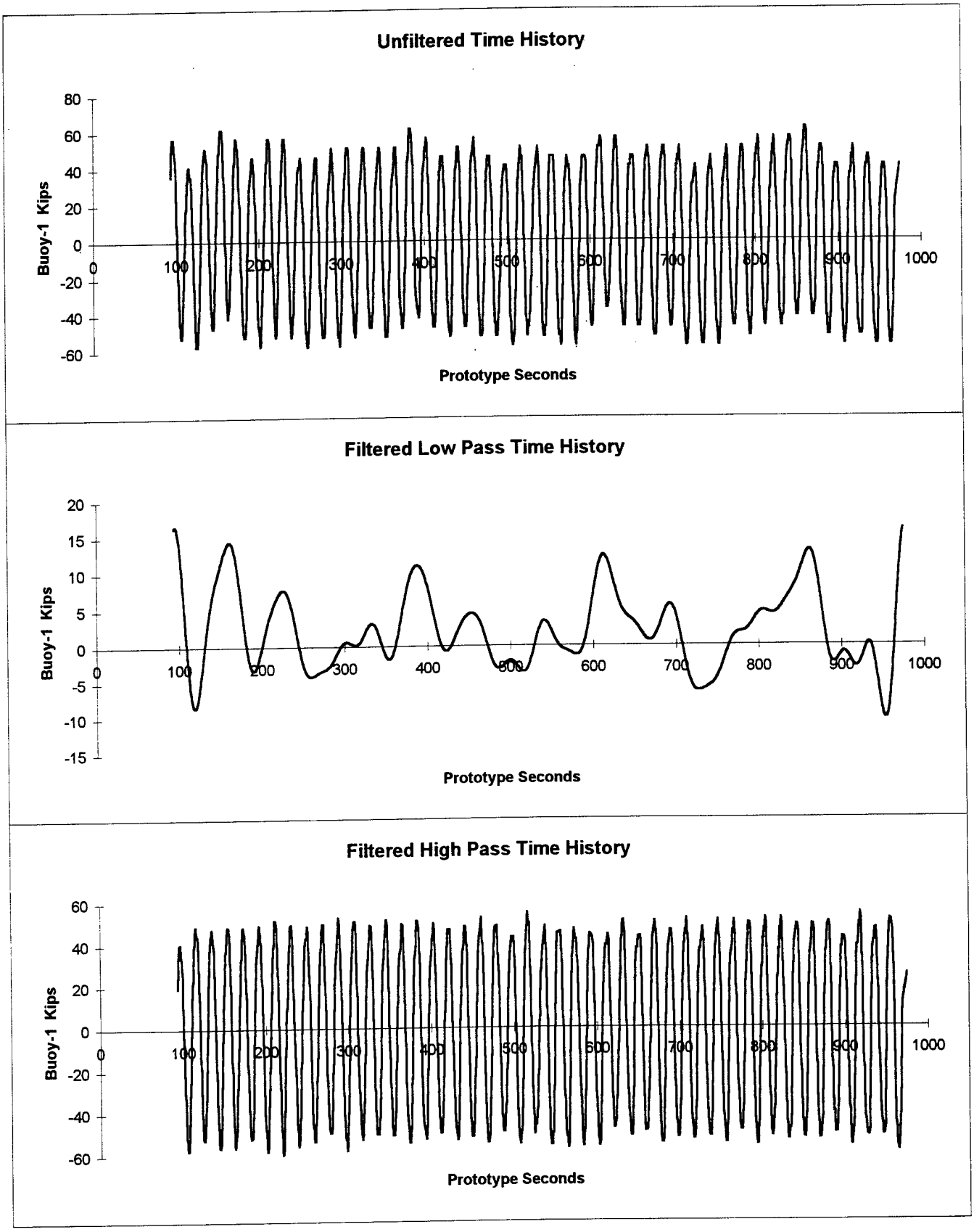

Unfiltered Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

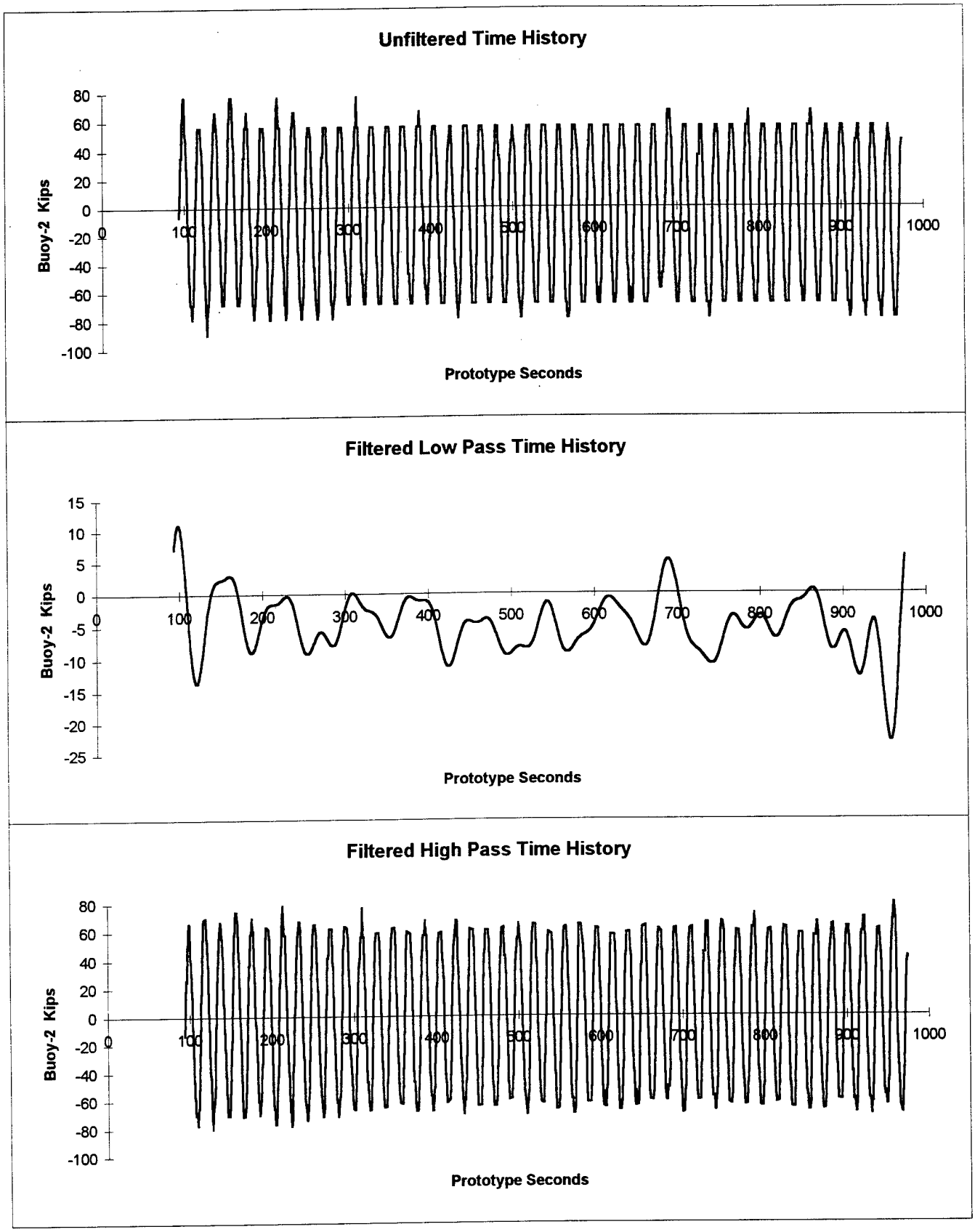

Unfiltered Time History
Heave Feet
8
6
4
2
0
-2
-4
-6
-8
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered High Pass Time History
Heave Feet
8
6
4
2
0
-2
-4
-6
-8
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

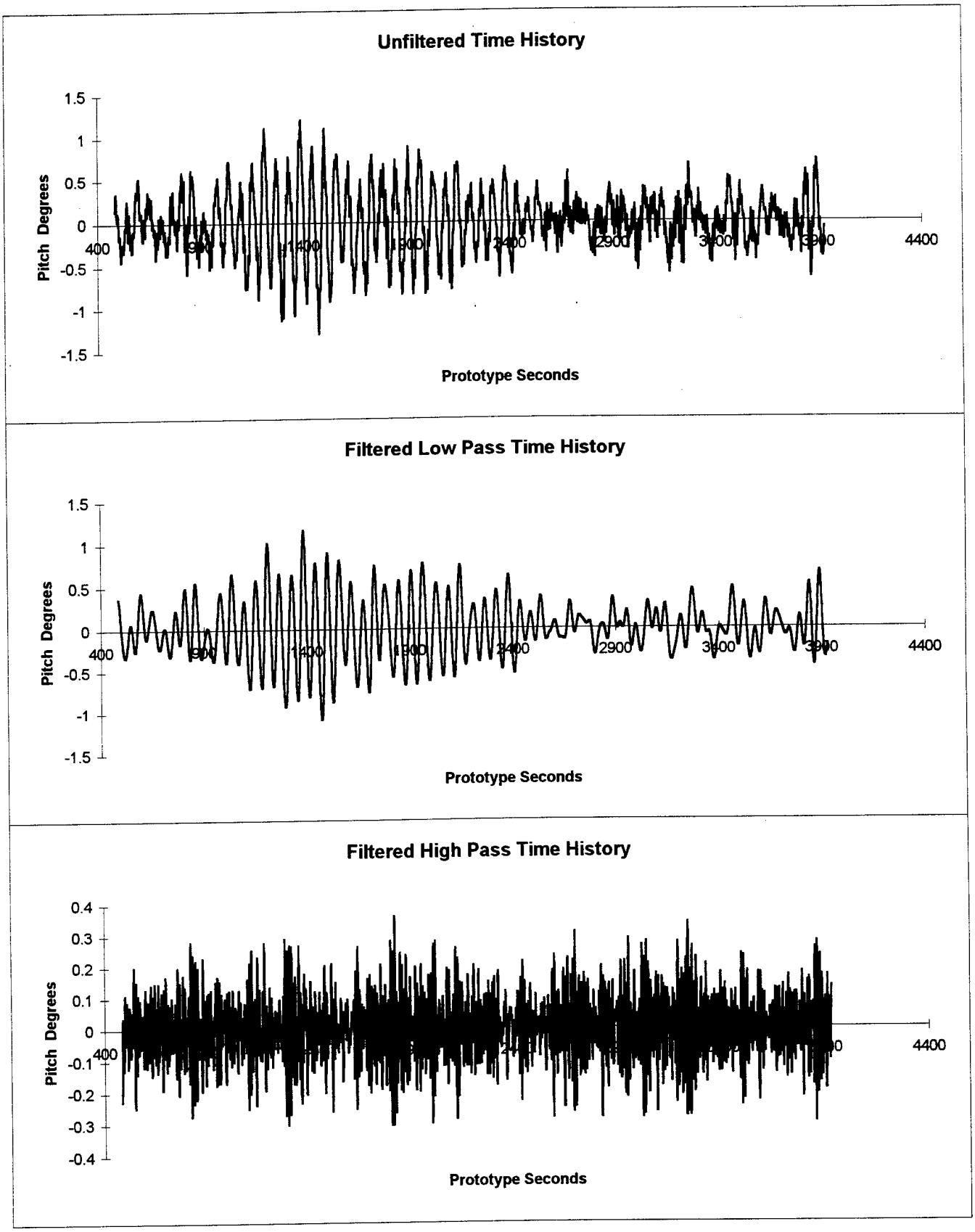

Unfiltered Time History
Surge Feet
8
6
4
2
0
-2
-4
-6
-8
-10
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
3
2
1
0
-1
-2
-3
-4
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered High Pass Time History
Surge Feet
8
6
4
2
0
-2
-4
-6
-8
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

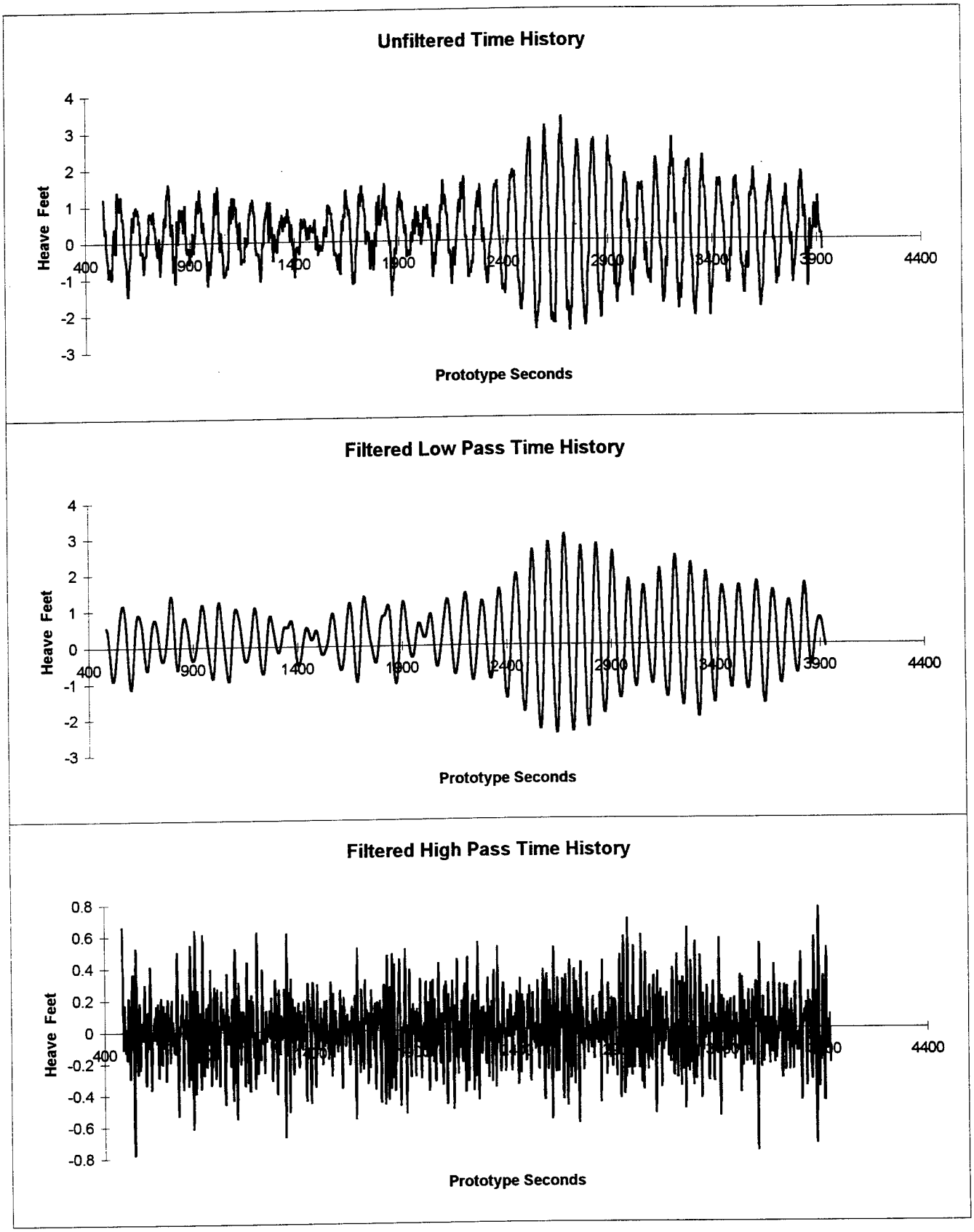

Unfiltered Time History
ML-1 Kips
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
275
270
265
260
255
250
245
240
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
50
40
30
20
10
0
-10
-20
-30
-40
-50
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

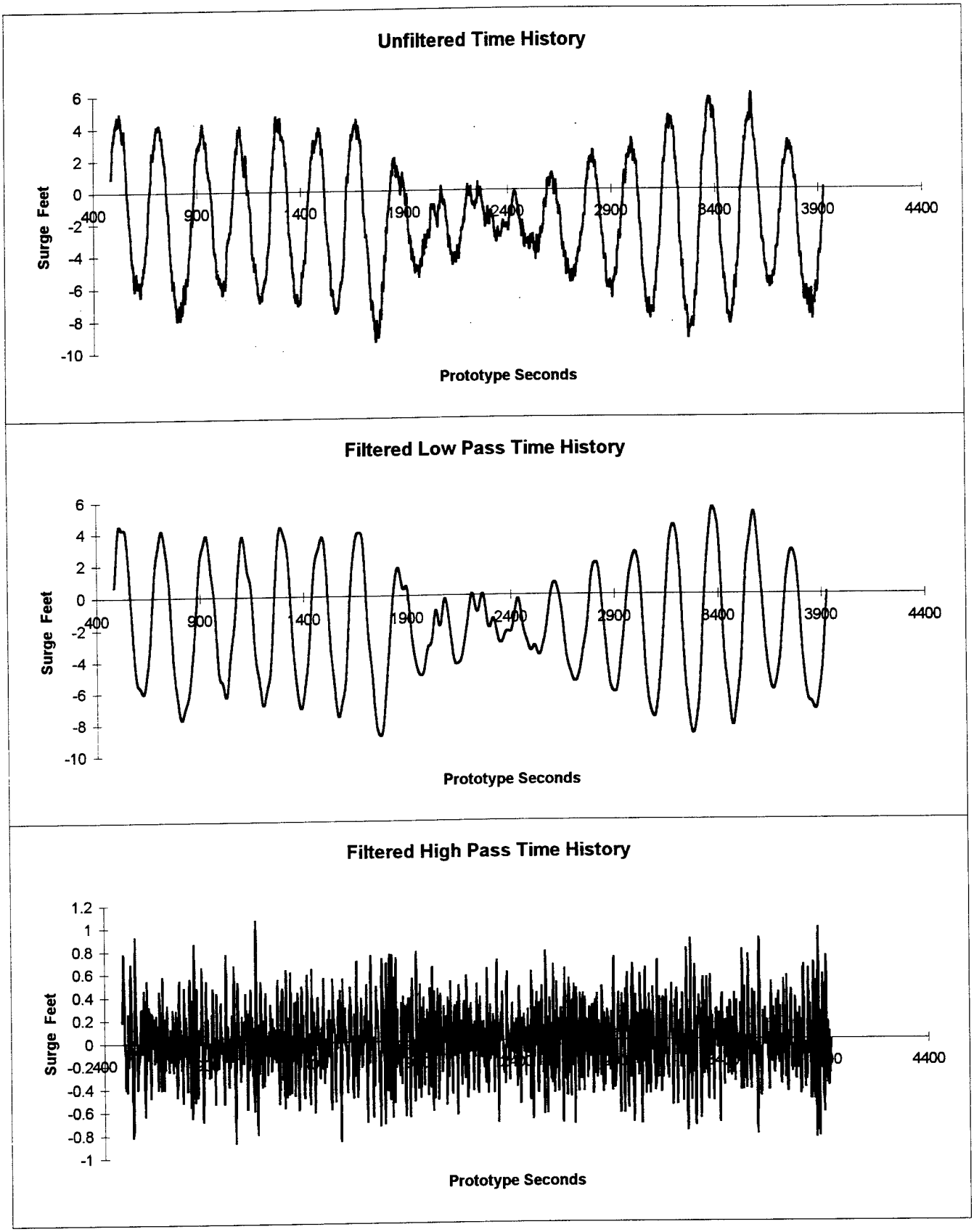

Unfiltered Time History
ML-2 Kips
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
280
278
276
274
272
270
268
266
264
262
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
30
20
10
0
-10
-20
-30
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

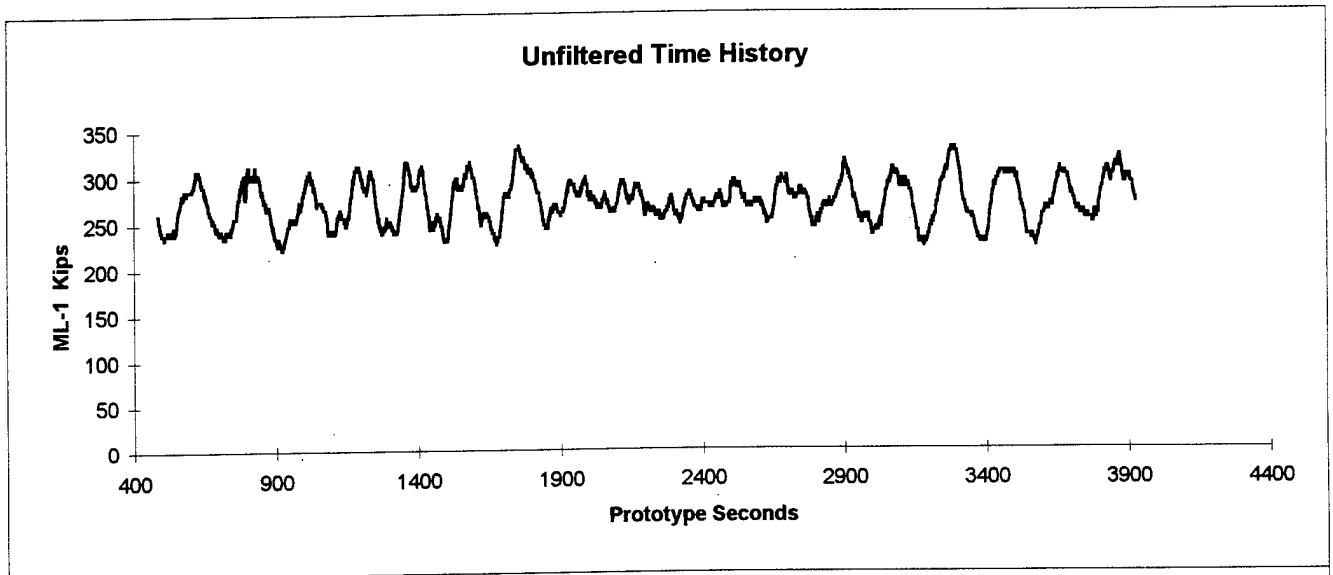

Unfiltered Time History
Buoy-1 Kips
80
60
40
20
0
-20
-40
-60
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered Low Pass Time History
Buoy-1 Kips
20
15
10
5
0
-5
-10
-15
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered High Pass Time History
Buoy-1 Kips
60
40
20
0
-20
-40
-60
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

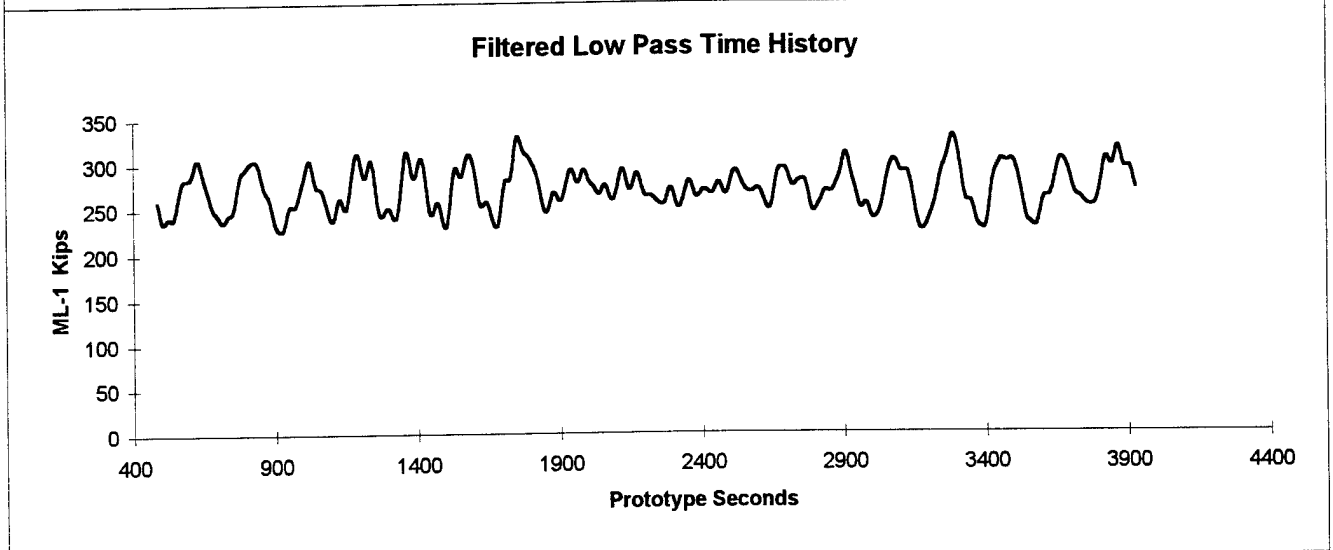

Unfiltered Time History
Buoy-2 Kips
80
60
40
20
0
-20
-40
-60
-80
-100
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered Low Pass Time History
Buoy-2 Kips
15
10
5
0
-5
-10
-15
-20
-25
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered High Pass Time History
Buoy-2 Kips
80
60
40
20
0
-20
-40
-60
-80
-100
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

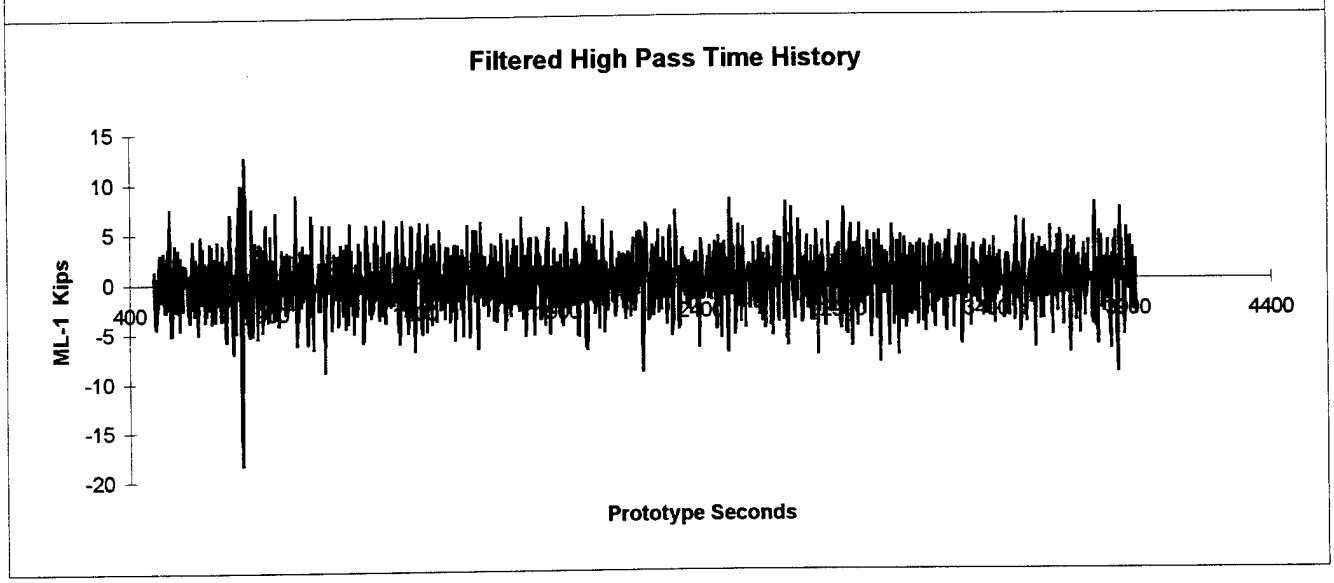

Unfiltered Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
400
1400
2400
2900
3400
4400
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
400
1400
2400
2900
3400
4400
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
400
4400
Prototype Seconds

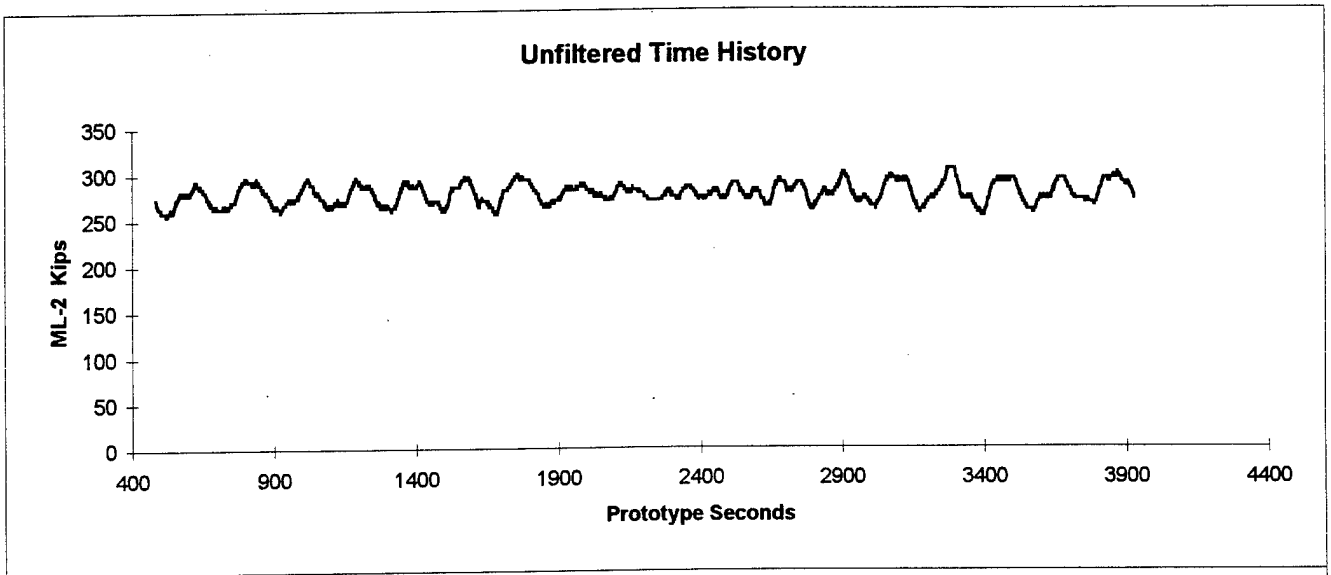

Unfiltered Time History
Heave Feet
4
3
2
1
0
-1
-2
-3
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
4
3
2
1
0
-1
-2
-3
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds
Filtered High Pass Time History
Heave Feet
0.8
0.6
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
400
4400
Prototype Seconds

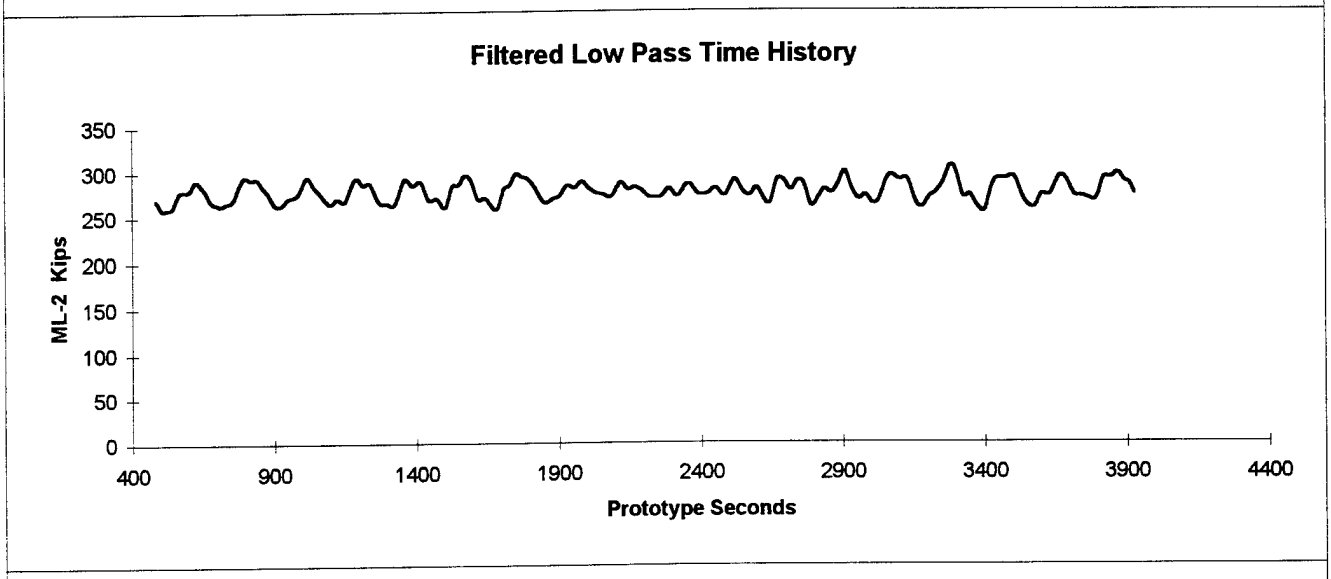

Unfiltered Time History
Surge Feet
6
4
2
0
-2
-4
-6
-8
-10
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
6
4
2
0
-2
-4
-6
-8
-10
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds
Filtered High Pass Time History
Surge Feet
1.2
1
0.8
0.6
0.4
0.2
0
-0.2400
-0.4
-0.6
-0.8
-1
4400
Prototype Seconds

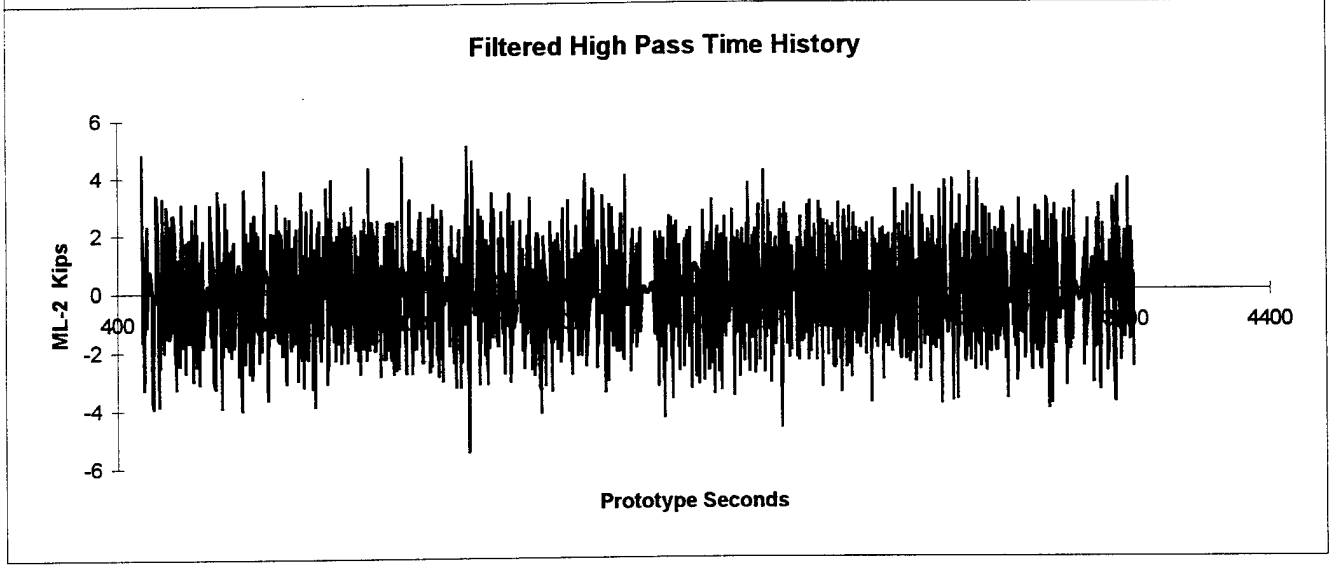

Unfiltered Time History
ML-1 Kips
350
300
250
200
150
100
50
0
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds

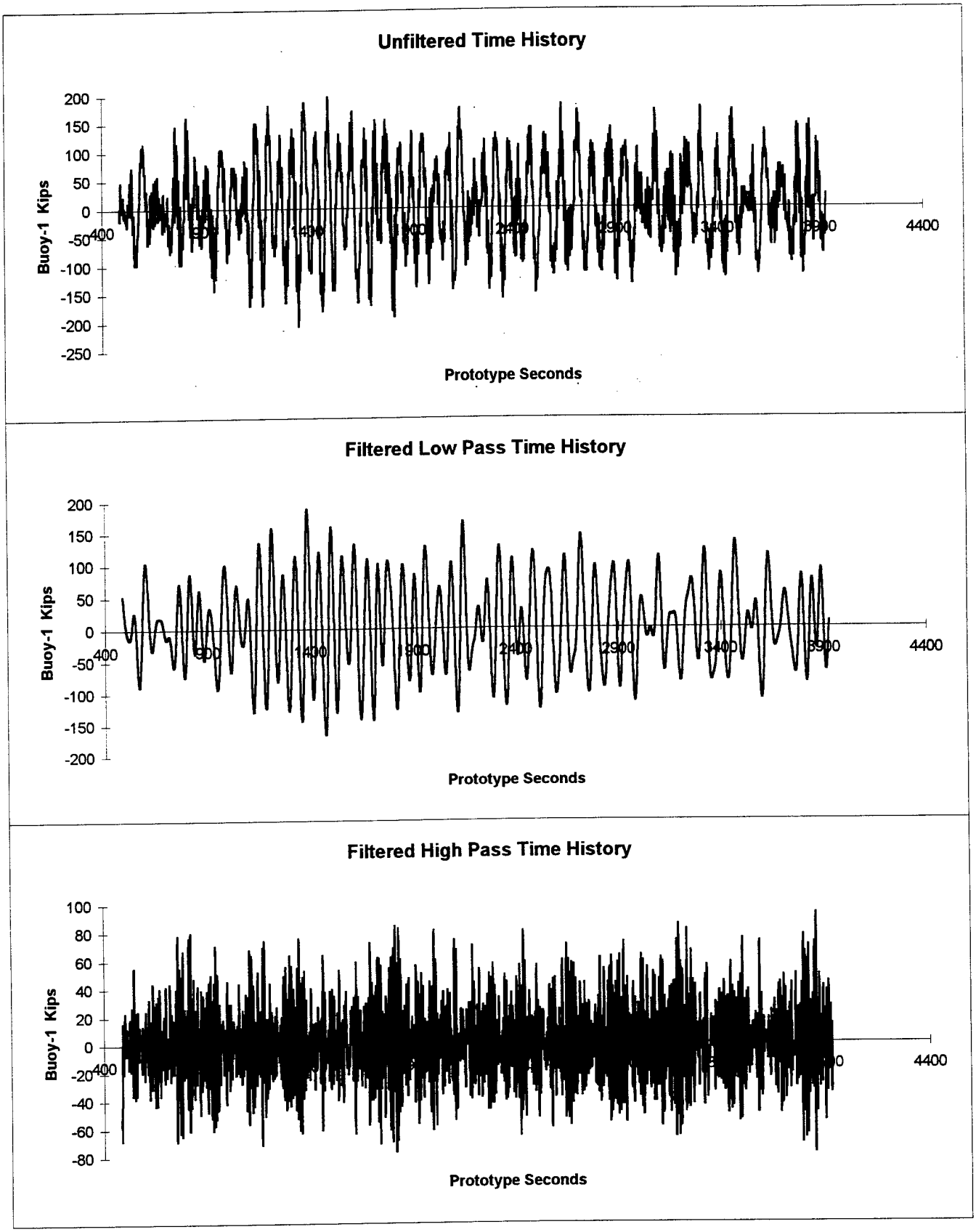

Filtered Low Pass Time History
ML-1 Kips
350
300
250
200
150
100
50
0
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds

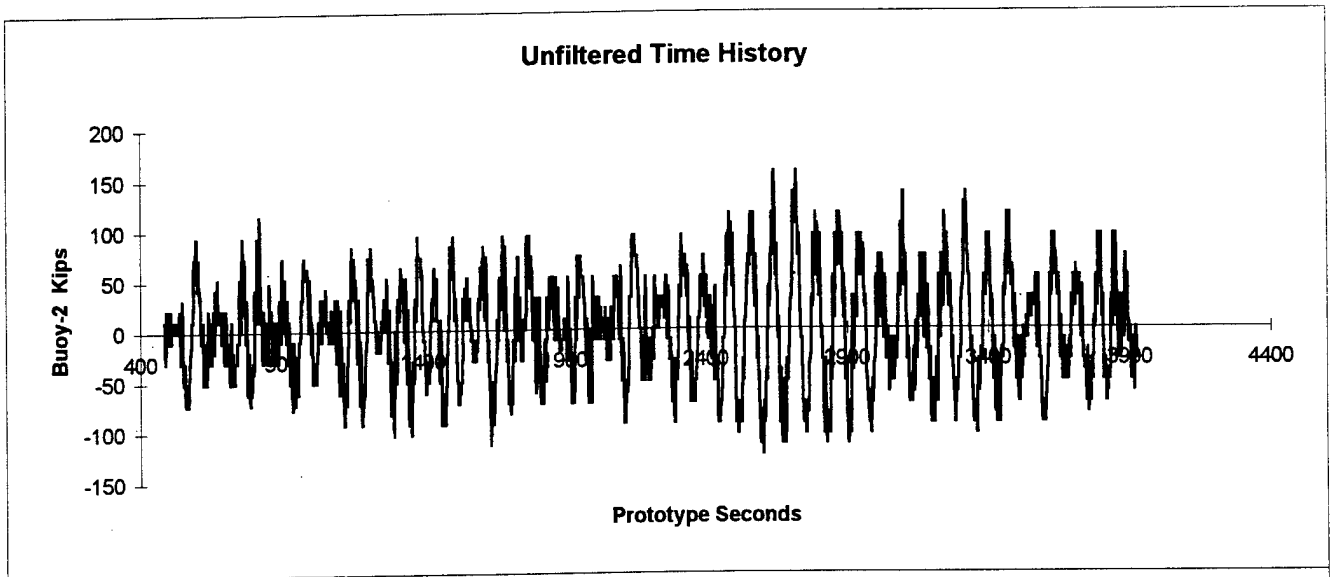

Filtered High Pass Time History
ML-1 Kips
15
10
5
0
-5
-10
-15
-20
400
4400
Prototype Seconds

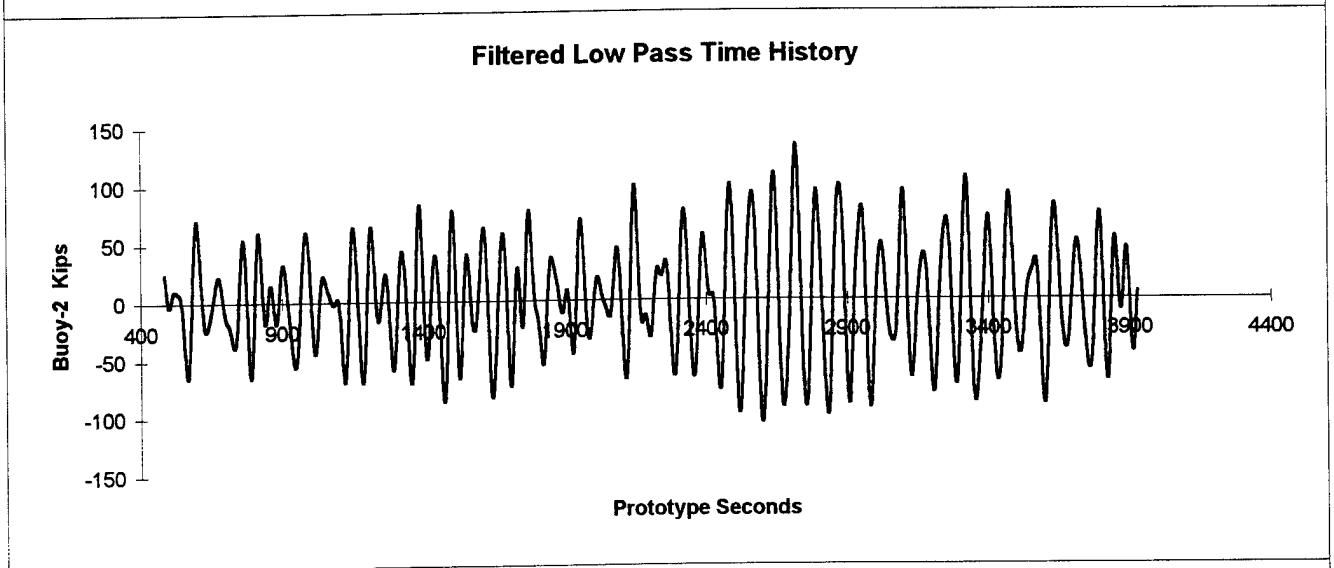

Unfiltered Time History
ML-2 Kips
350
300
250
200
150
100
50
0
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds

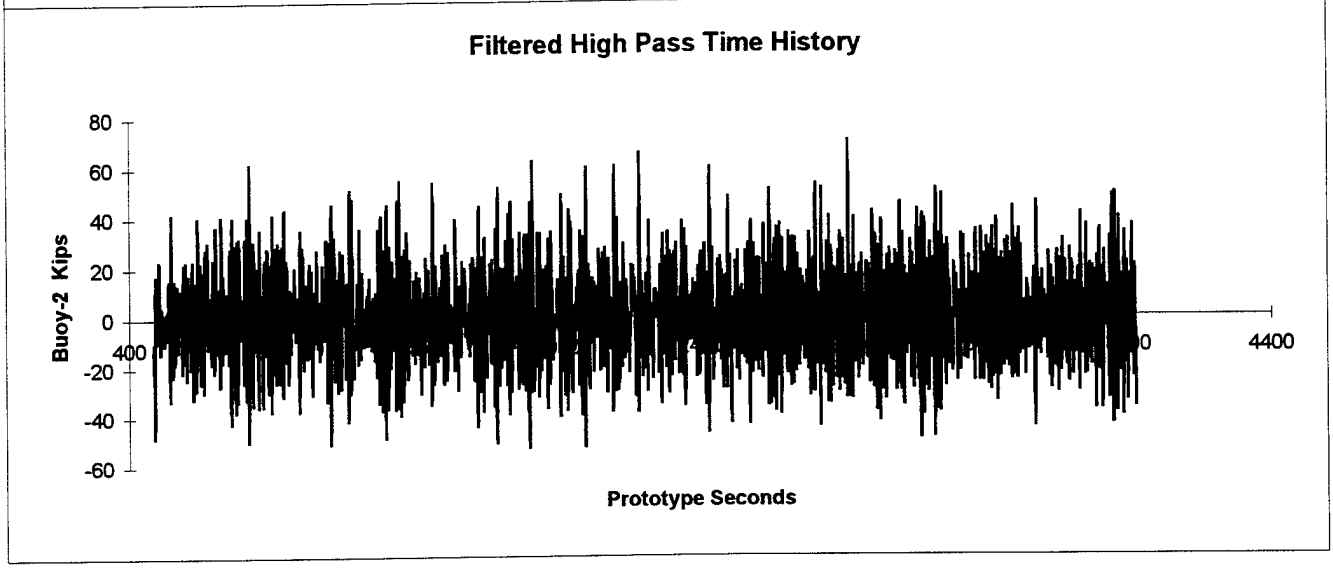

Filtered Low Pass Time History
ML-2 Kips
350
300
250
200
150
100
50
0
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds

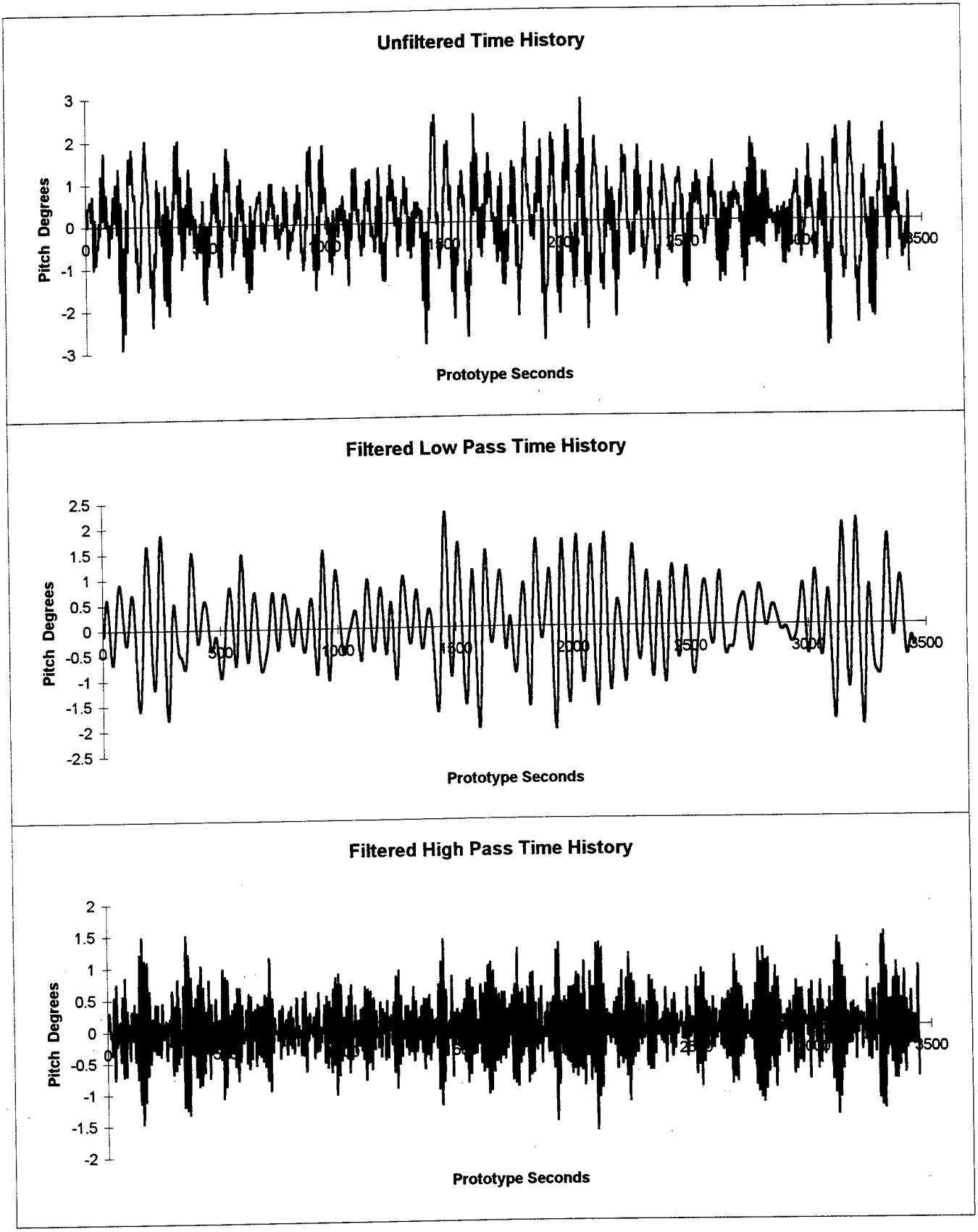

Filtered High Pass Time History
ML-2 Kips
6
4
2
0
-2
-4
-6
400
4400
Prototype Seconds

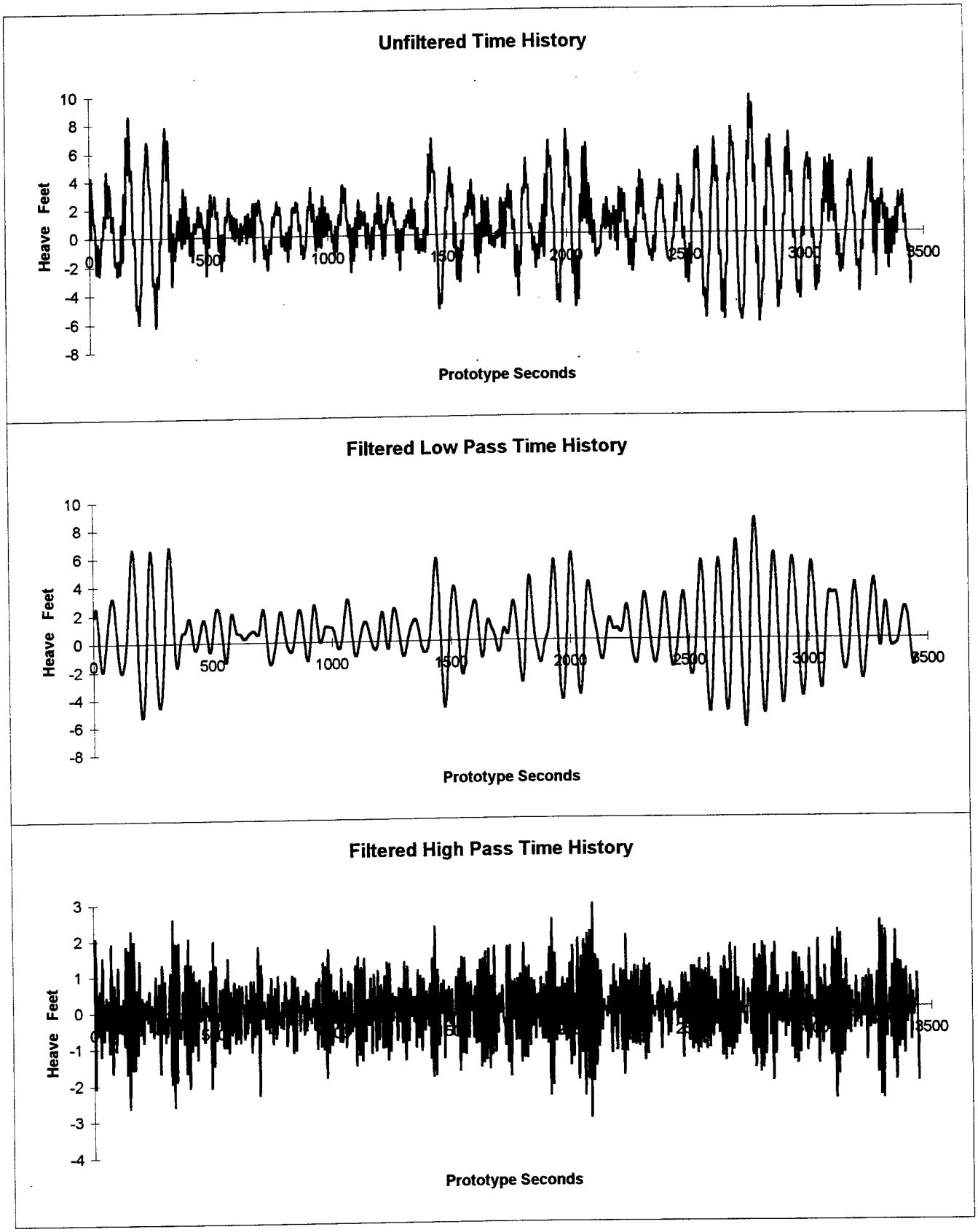

Unfiltered Time History
Buoy-1 Kips
200
150
100
50
0
-50
-100
-150
-200
-250
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds
Filtered Low Pass Time History
Buoy-1 Kips
200
150
100
50
0
-50
-100
-150
-200
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds
Filtered High Pass Time History
Buoy-1 Kips
100
80
60
40
20
0
-20
-40
-60
-80
400
4400
Prototype Seconds

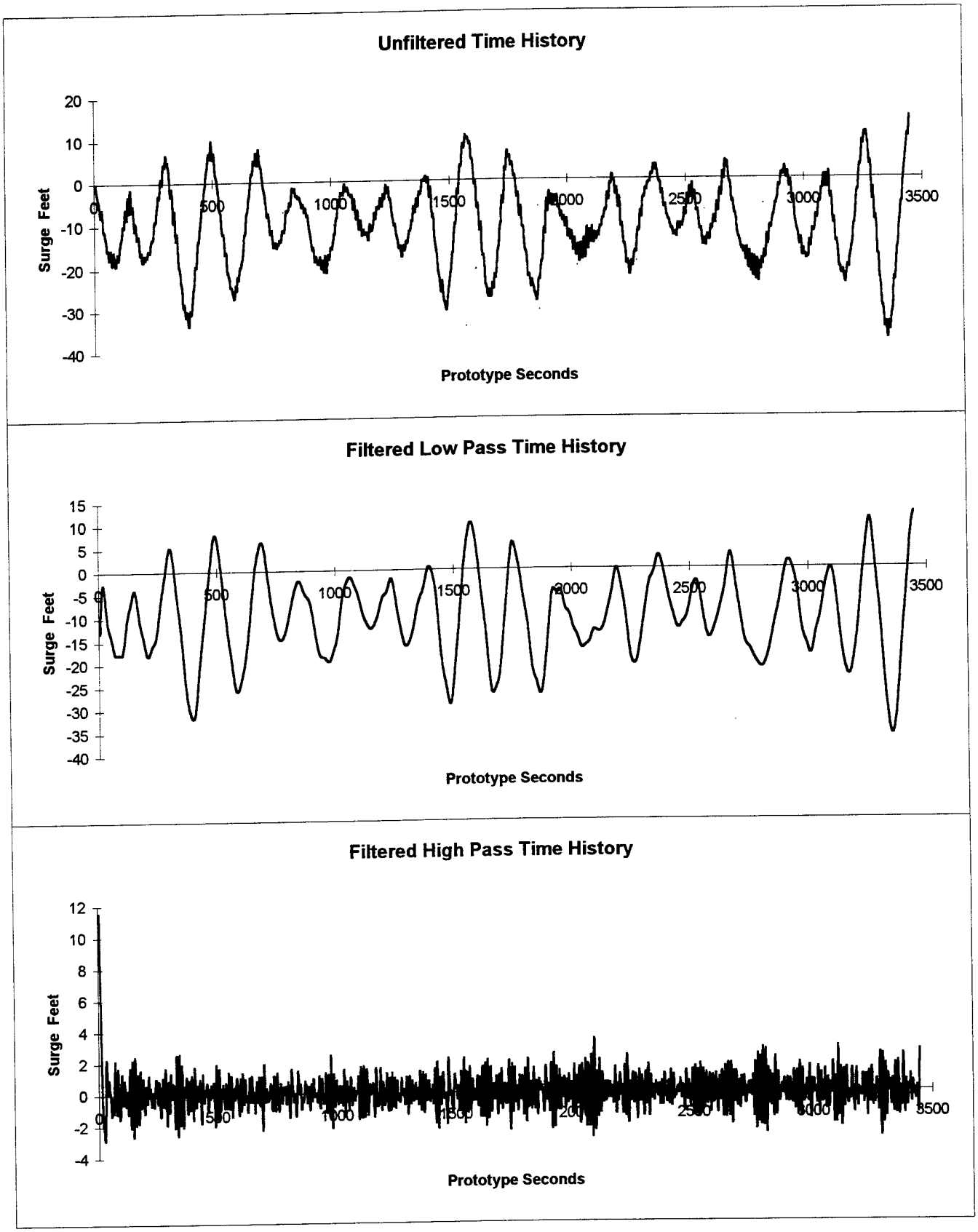

Unfiltered Time History
Buoy-2 Kips
200
150
100
50
0
-50
-100
-150
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds

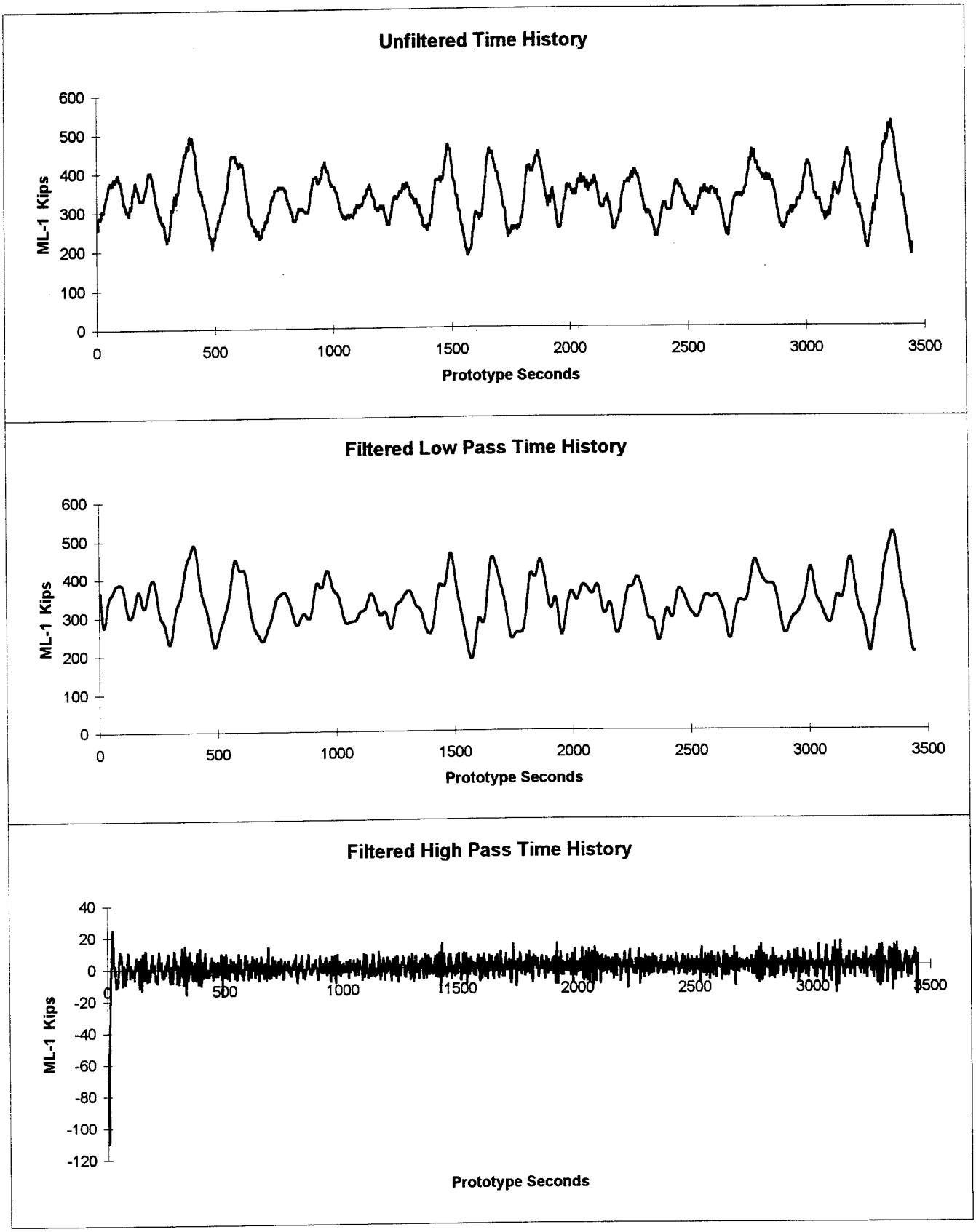

Filtered Low Pass Time History
Buoy-2 Kips
150
100
50
0
-50
-100
-150
400
900
1400
1900
2400
2900
3400
3900
4400
Prototype Seconds

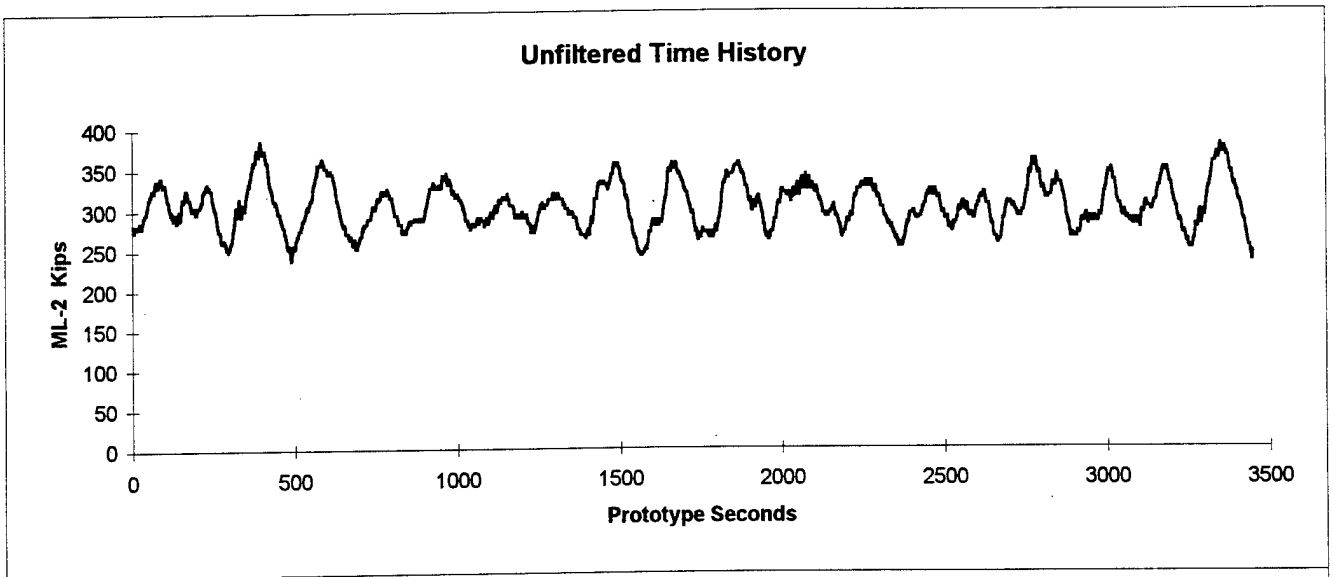

Filtered High Pass Time History
Buoy-2 Kips
80
60
40
20
0
-20
-40
-60
400
4400
Prototype Seconds

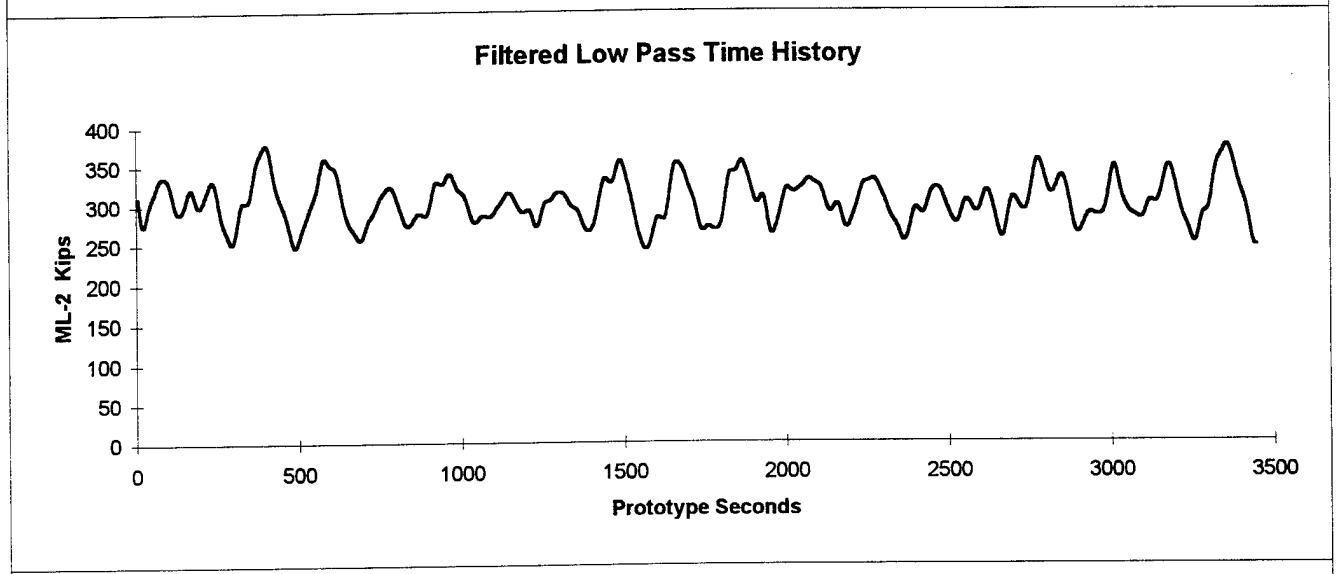

Unfiltered Time History
Pitch Degrees
3
2
1
0
-1
-2
-3
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
2.5
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
-2.5
0
500
1000
1500
2000
3500
3000
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
Prototype Seconds

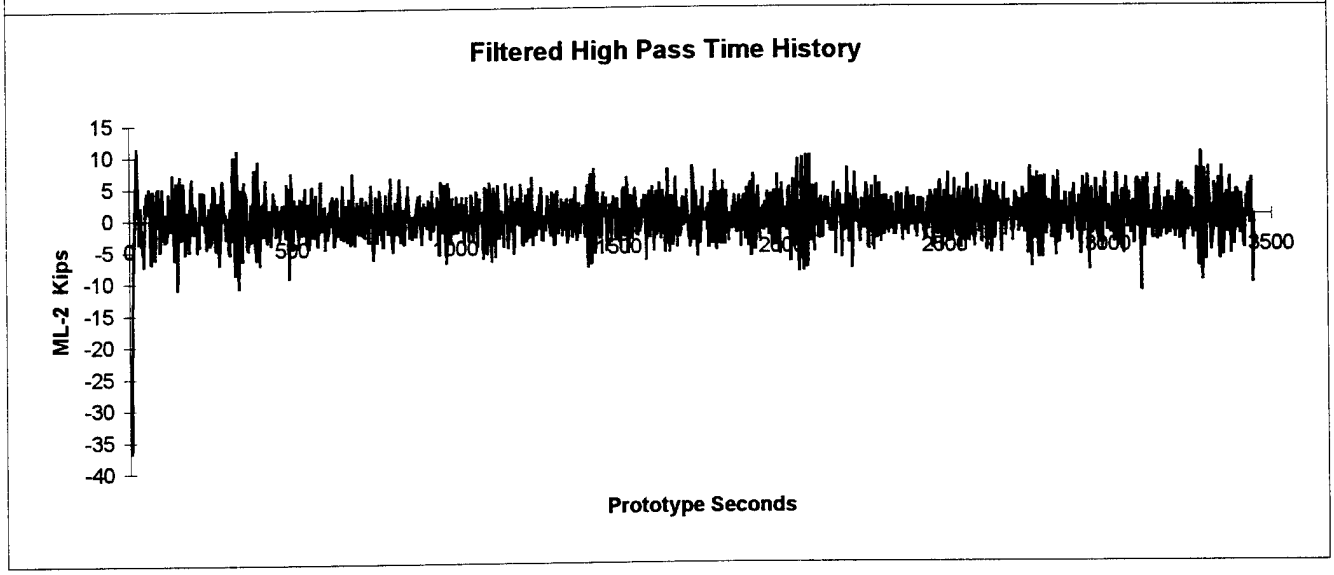

Unfiltered Time History
Heave Feet
10
8
6
4
2
0
-2
-4
-6
-8
0
500
1000
1500
2000
2500
3000
3500
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
10
8
6
4
2
0
-2
-4
-6
-8
0
500
1000
1500
2000
2500
3000
3500
Prototype Seconds
Filtered High Pass Time History
Heave Feet
3
2
1
0
-1
-2
-3
-4
3500
Prototype Seconds

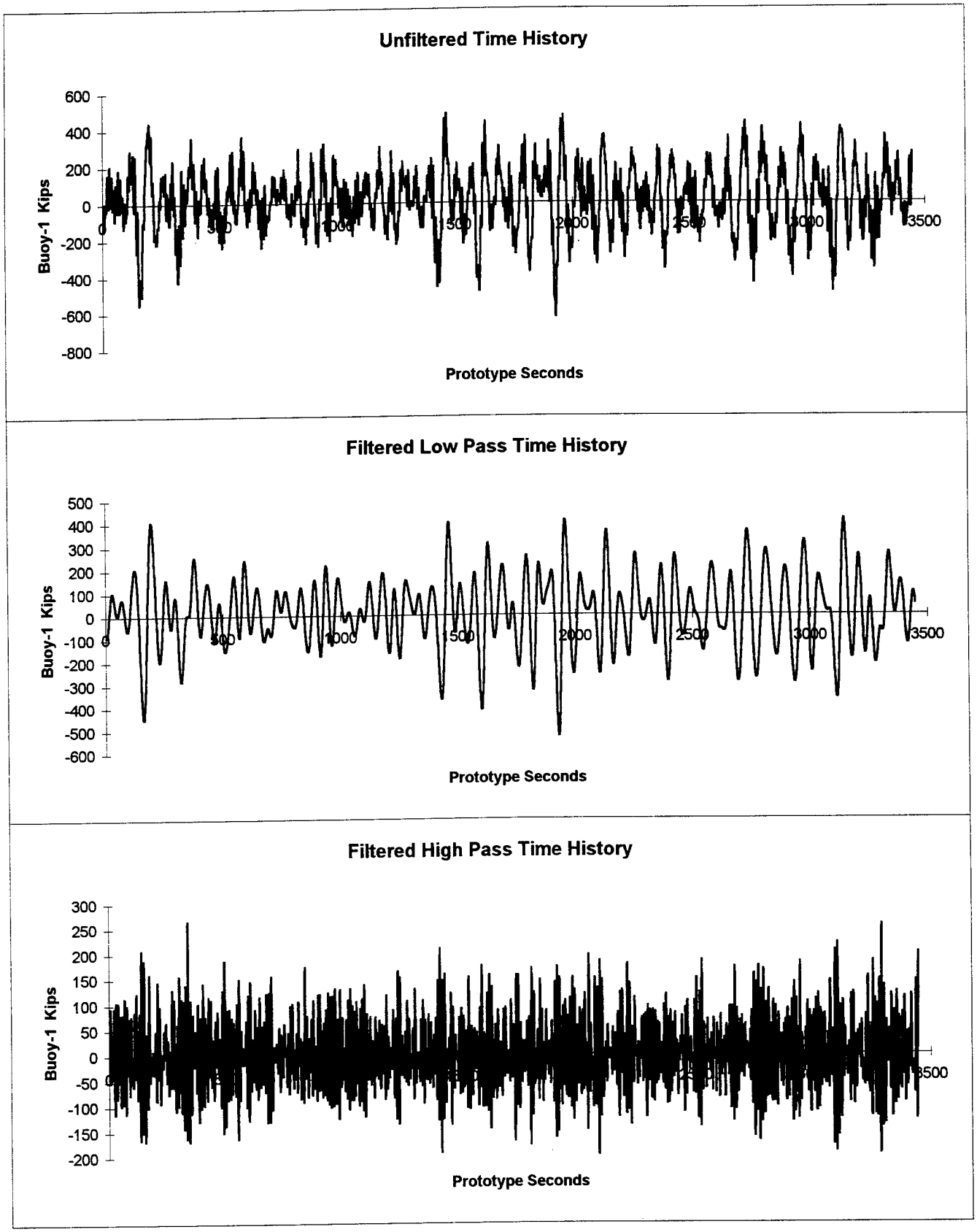

Unfiltered Time History
Surge Feet
20
10
0
-10
-20
-30
-40
0
500
1000
1500
2000
2500
3000
3500
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
500
1000
1500
2000
2500
3000
3500
Prototype Seconds
Filtered High Pass Time History
Surge Feet
12
10
8
6
4
2
0
-2
-4
Prototype Seconds

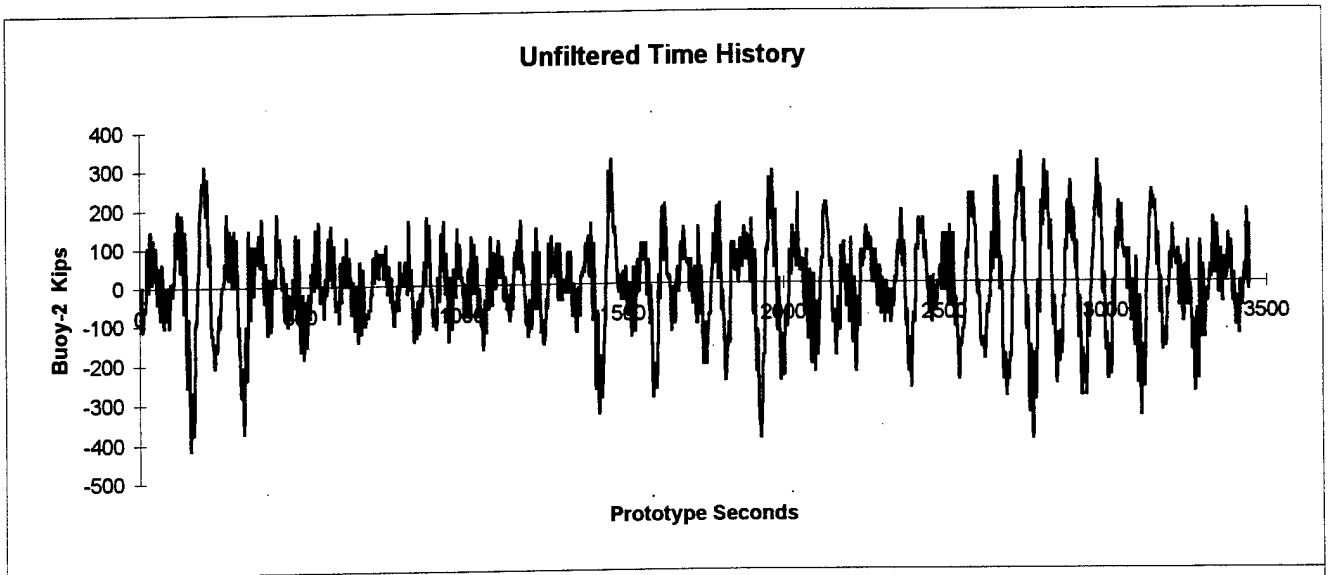

Unfiltered Time History
ML-1 Kips
600
500
400
300
200
100
0
0
500
1000
1500
2000
2500
3000
3500
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
600
500
400
300
200
100
0
0
500
1000
1500
2000
2500
3000
3500
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
40
20
0
-20
-40
-60
-80
-100
-120
500
1000
1500
2000
2500
3000
3500
Prototype Seconds

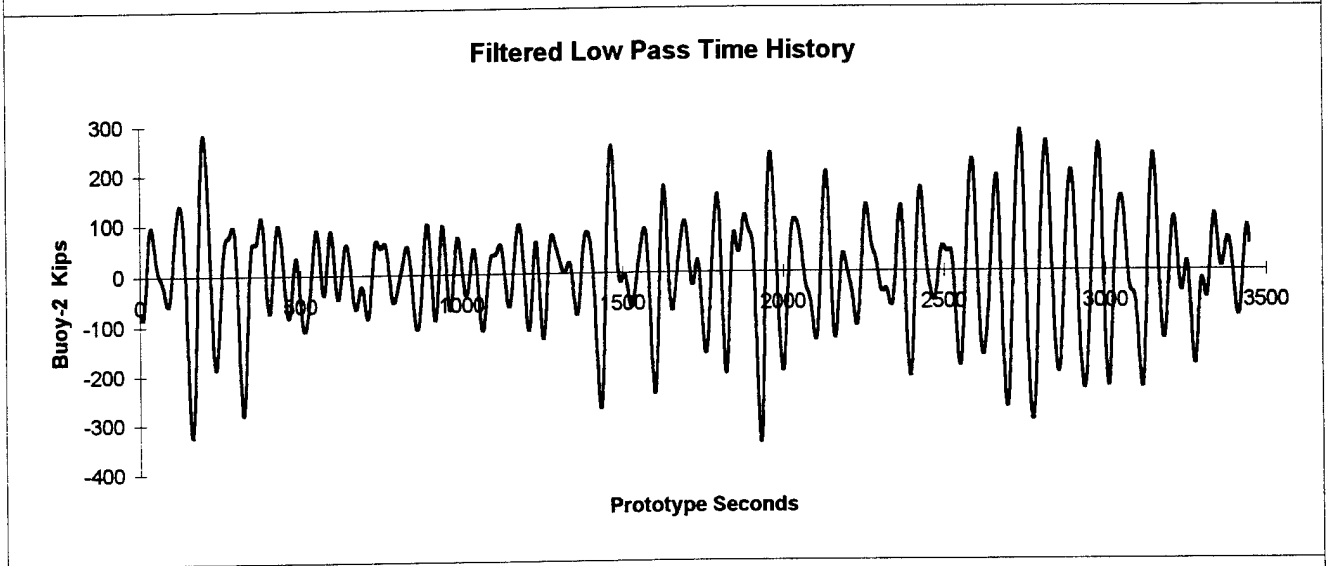

Unfiltered Time History
ML-2 Kips
400
350
300
250
200
150
100
50
0
0
500
1000
1500
2000
2500
3000
3500
Prototype Seconds

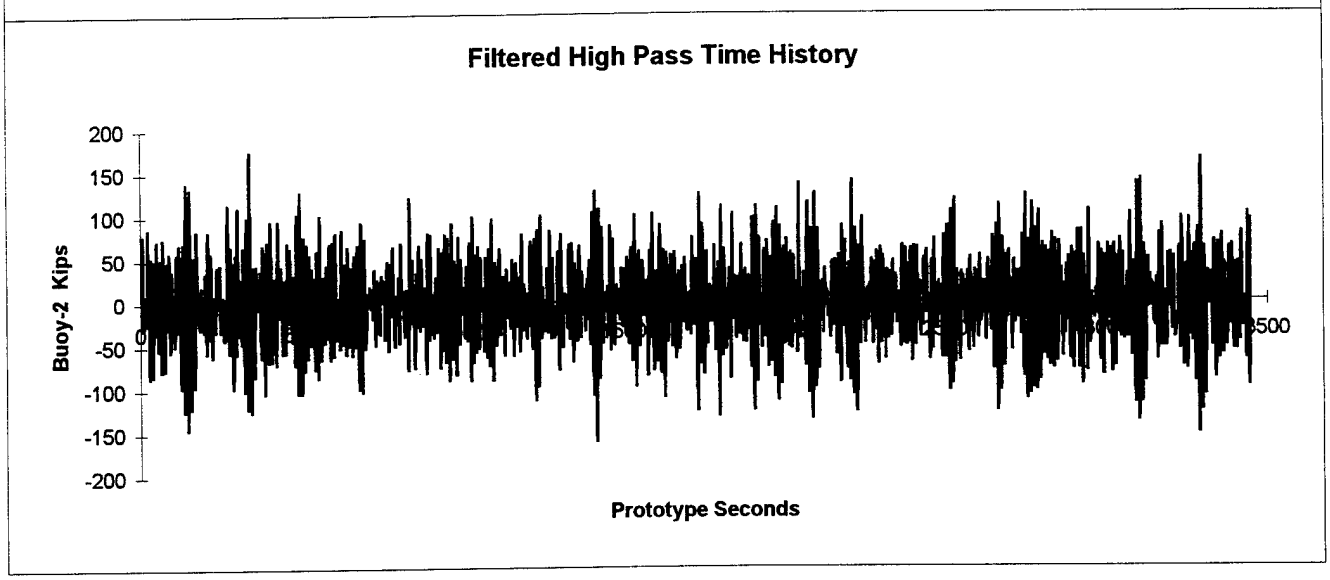

Filtered Low Pass Time History
ML-2 Kips
400
350
300
250
200
150
100
50
0
0
500
1000
1500
2000
2500
3000
3500
Prototype Seconds

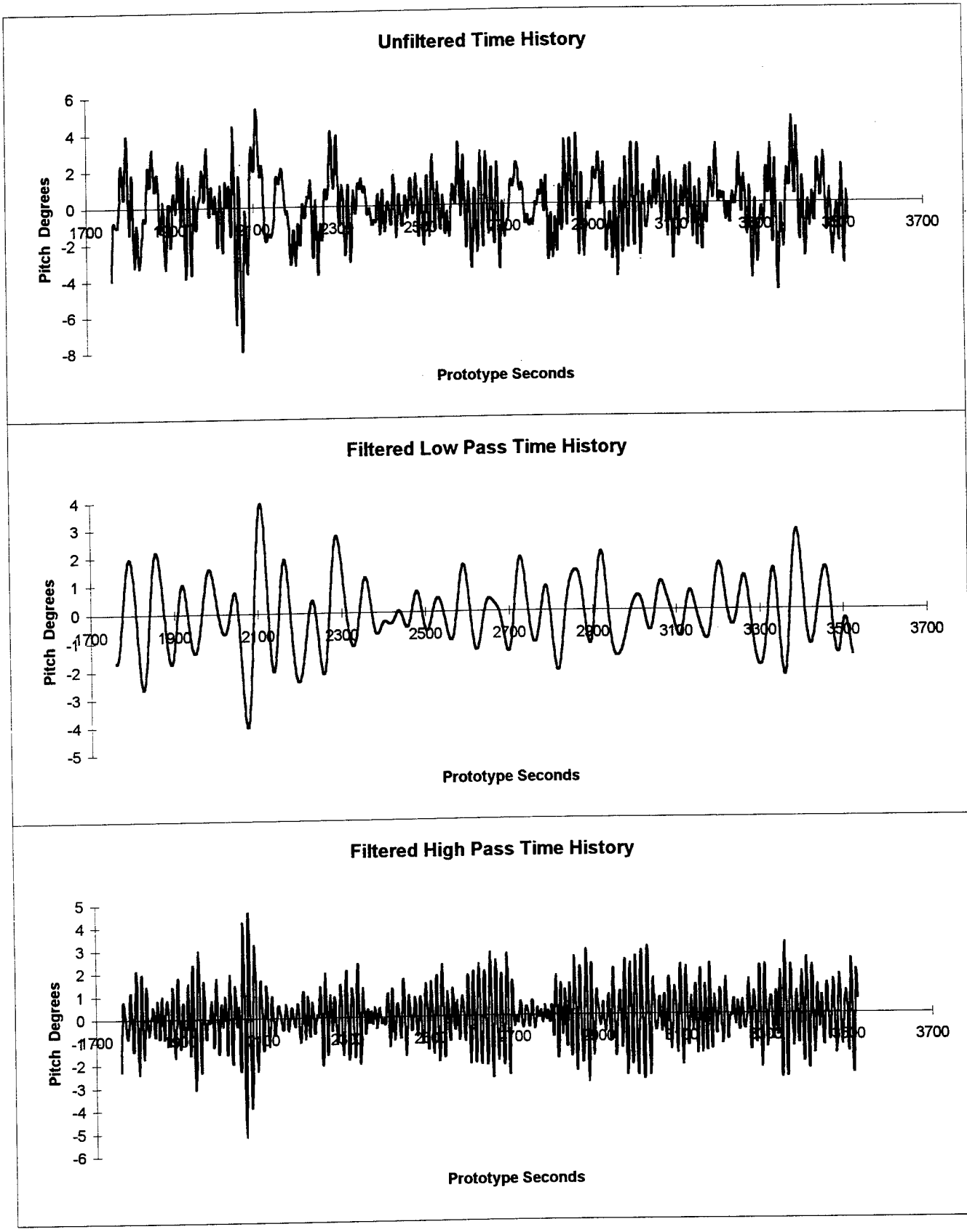

Filtered High Pass Time History
ML-2 Kips
15
10
5
0
-5
-10
-15
-20
-25
-30
-35
-40
Prototype Seconds

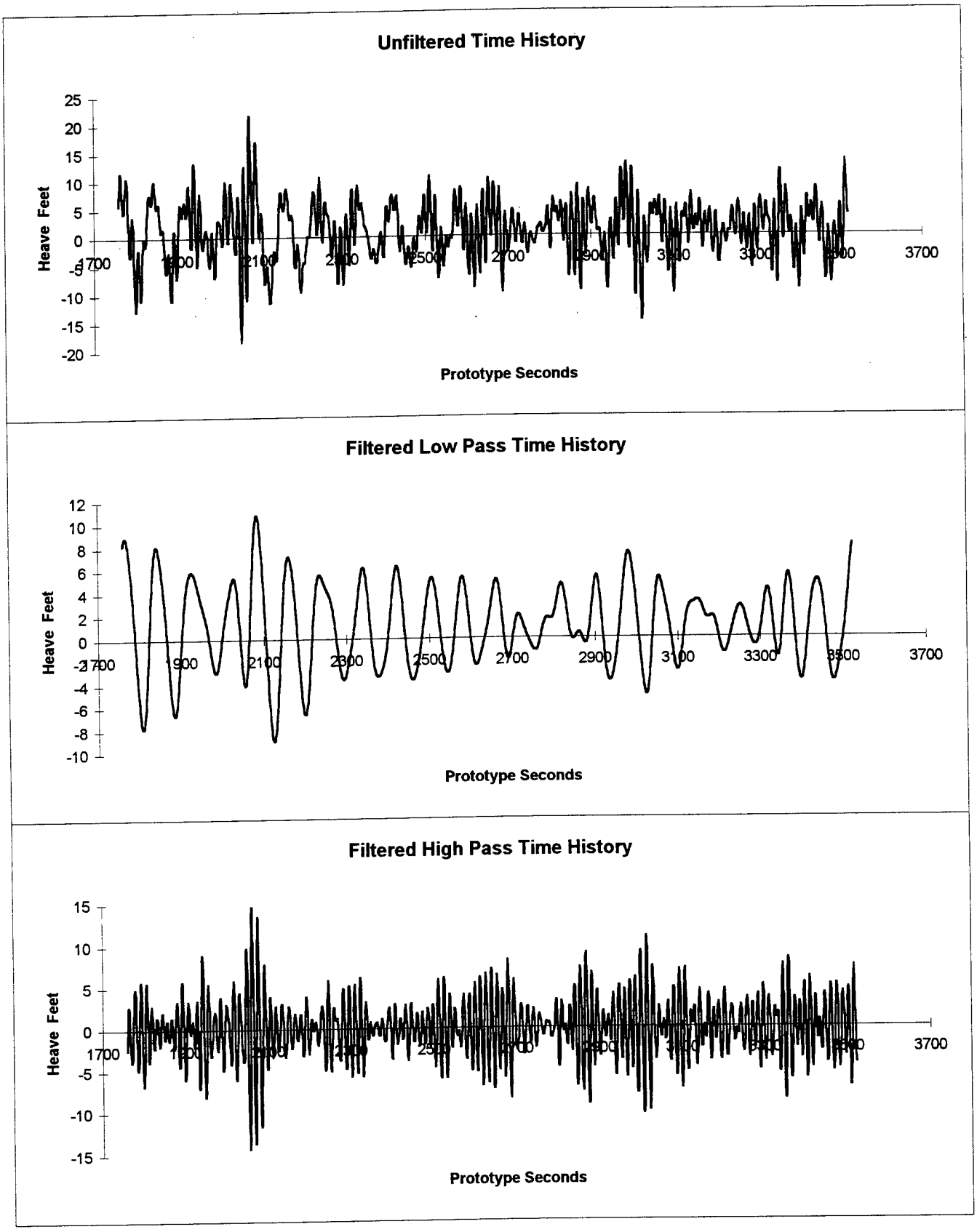

Unfiltered Time History
Buoy-1 Kips
600
400
200
0
-200
-400
-600
-800
0
500
1000
1500
2000
2500
3000
3500
Prototype Seconds
Filtered Low Pass Time History
Buoy-1 Kips
500
400
300
200
100
0
-100
-200
-300
-400
-500
-600
0
500
1000
1500
2000
2500
3000
3500
Prototype Seconds
Filtered High Pass Time History
Buoy-1 Kips
300
250
200
150
100
50
0
-50
-100
-150
-200
0
3500
Prototype Seconds

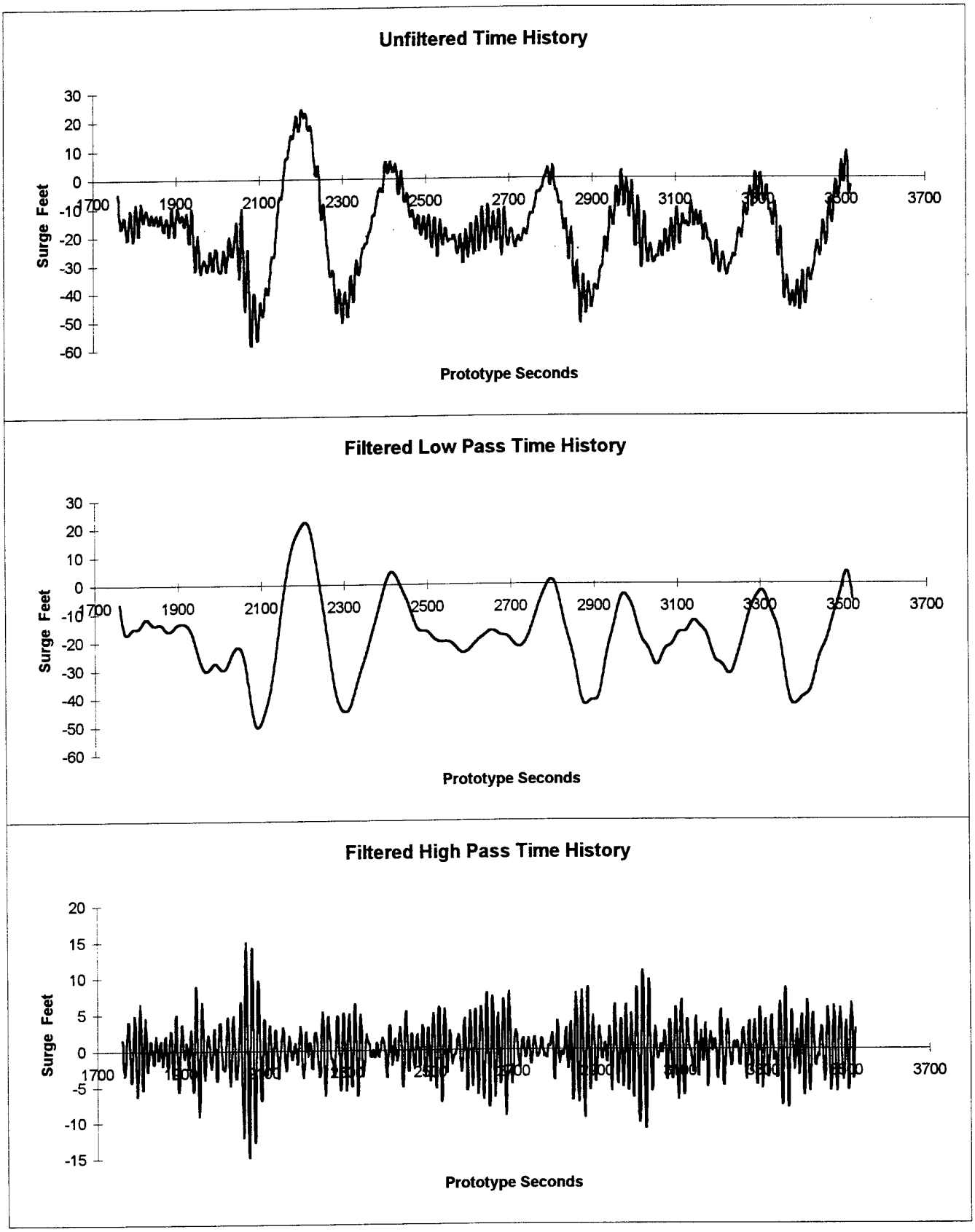

Unfiltered Time History
Buoy-2 Kips
400
300
200
100
0
-100
-200
-300
-400
-500
3500
Prototype Seconds

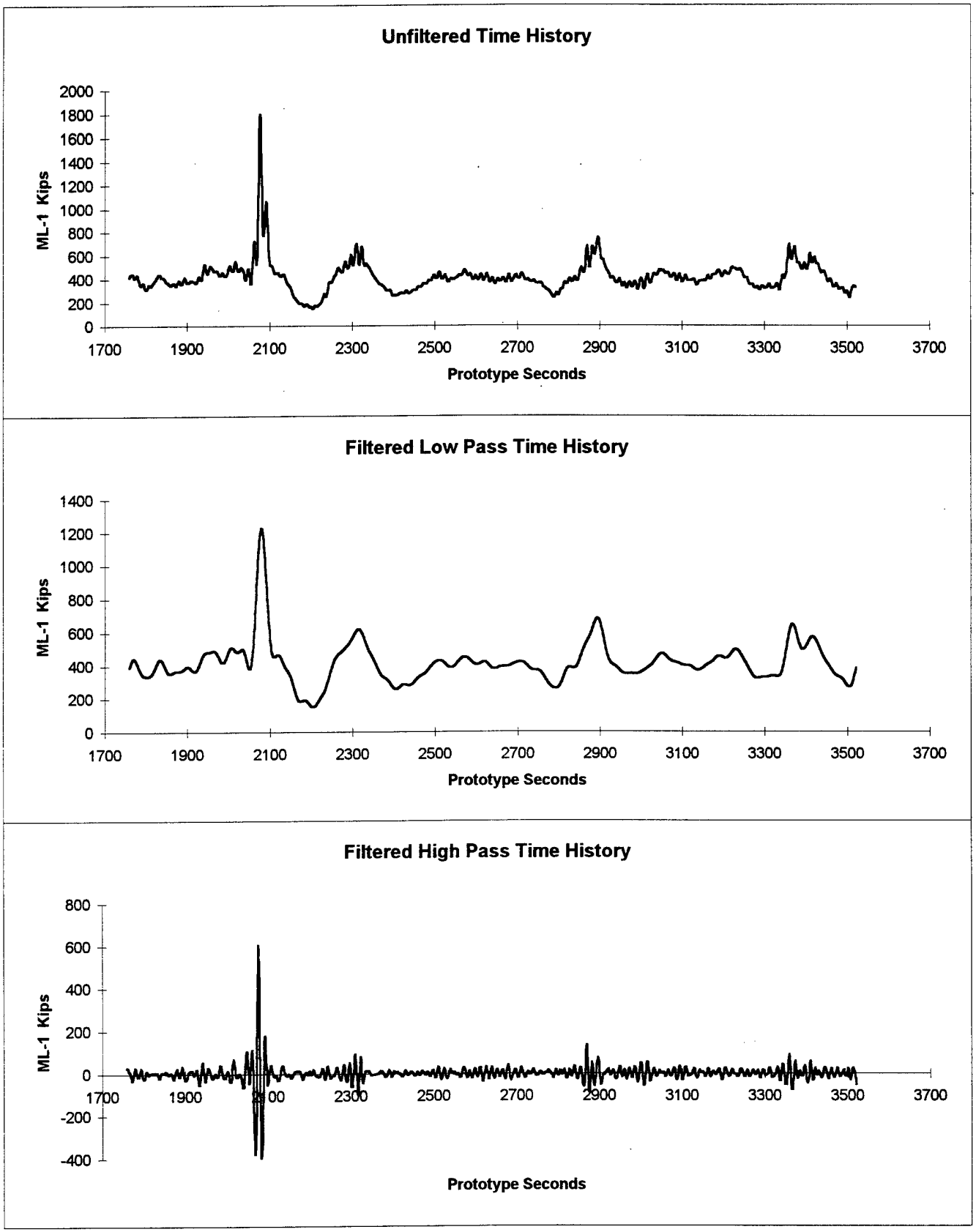

Filtered Low Pass Time History
Buoy-2 Kips
300
200
100
0
-100
-200
-300
-400
1000
2000
2500
3000
3500
Prototype Seconds

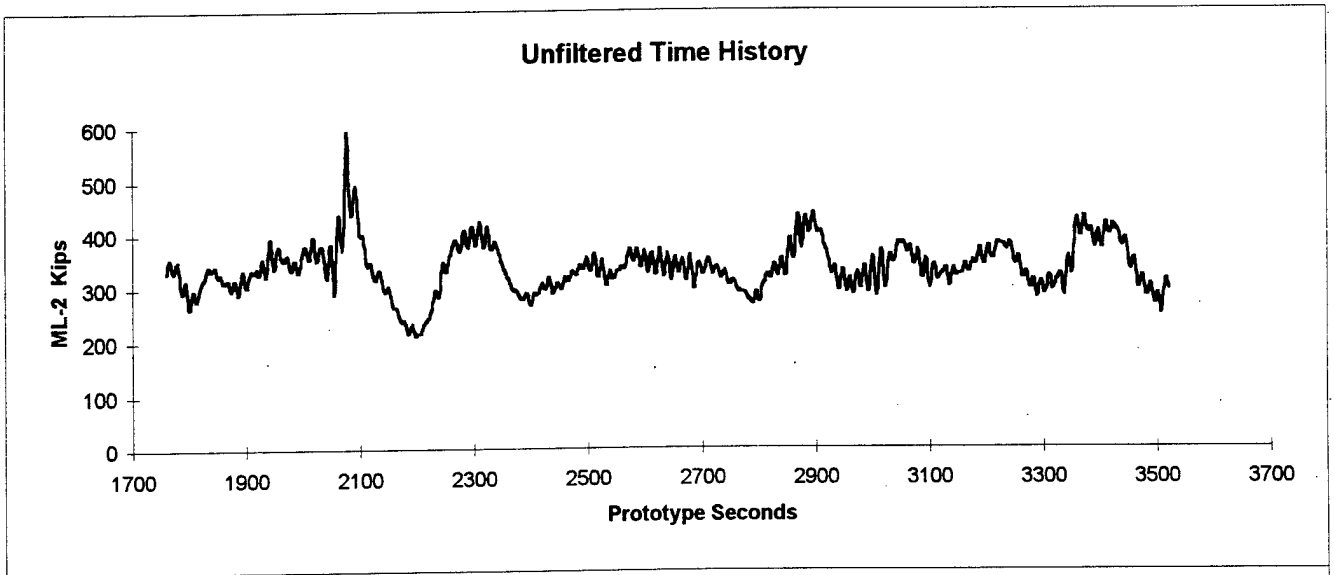

Filtered High Pass Time History
Buoy-2 Kips
200
150
100
50
0
-50
-100
-150
-200
Prototype Seconds

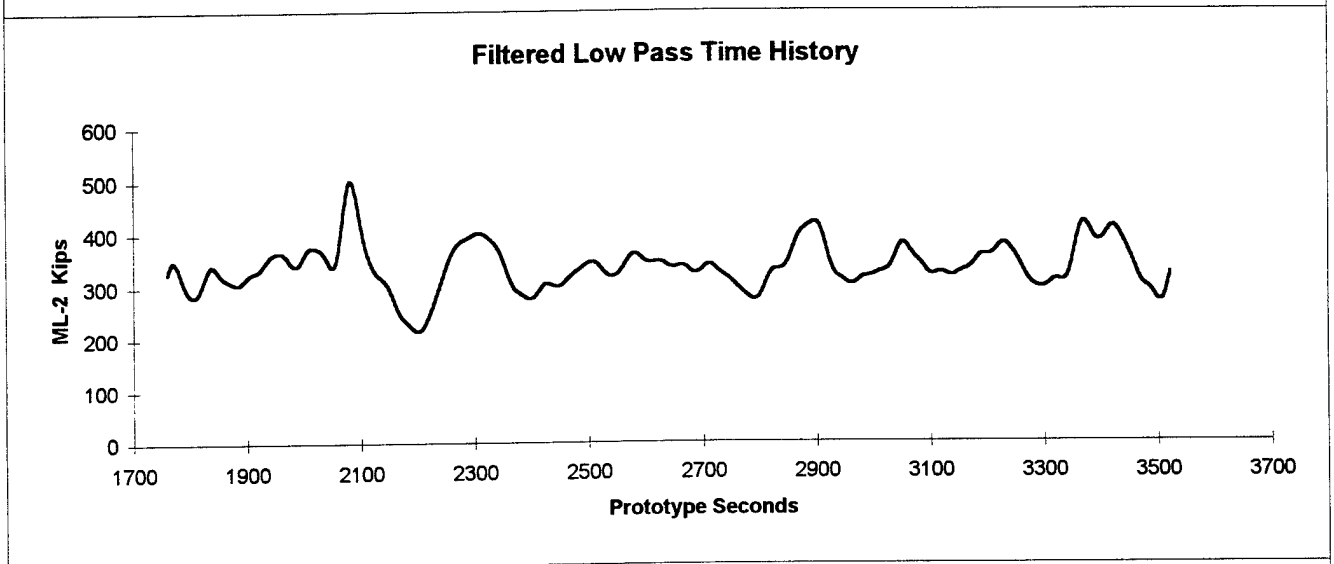

Unfiltered Time History
Pitch Degrees
6
4
2
0
-2
-4
-6
-8
1700
3700
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
4
3
2
1
0
-1
-2
-3
-4
-5
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
5
4
3
2
1
0
-1
-2
-3
-4
-5
-6
1700
3700
Prototype Seconds

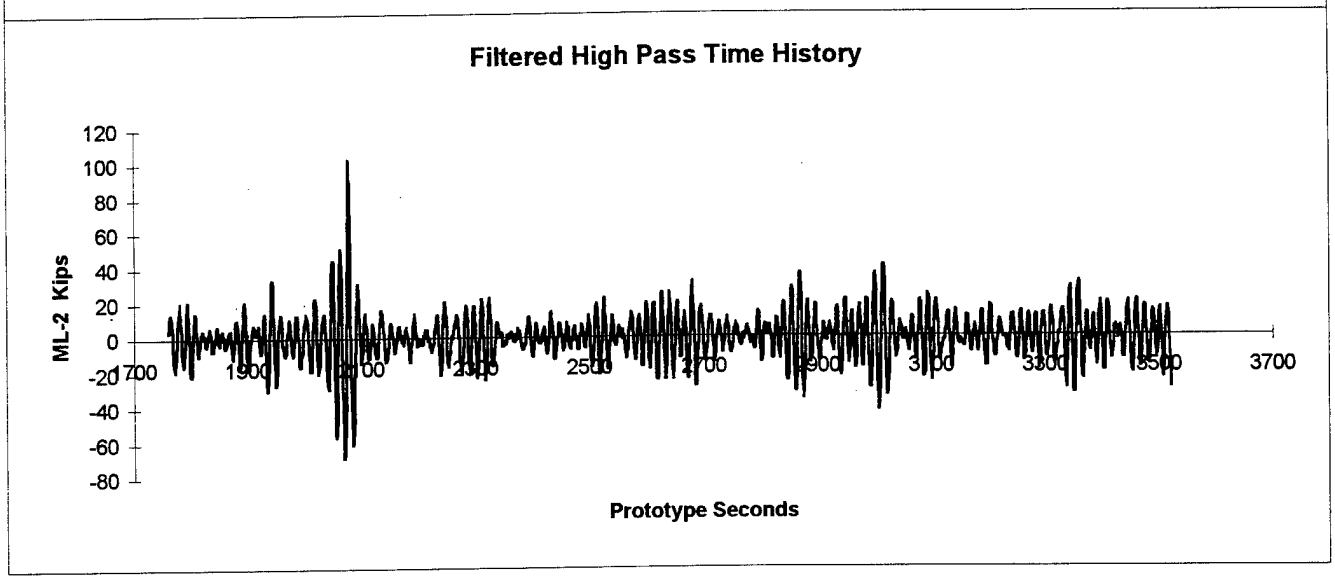

Unfiltered Time History
Heave Feet
25
20
15
10
5
0
-5
-10
-15
-20
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
12
10
8
6
4
2
0
-2
-4
-6
-8
-10
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered High Pass Time History
Heave Feet
15
10
5
0
-5
-10
-15
1700
3700
Prototype Seconds

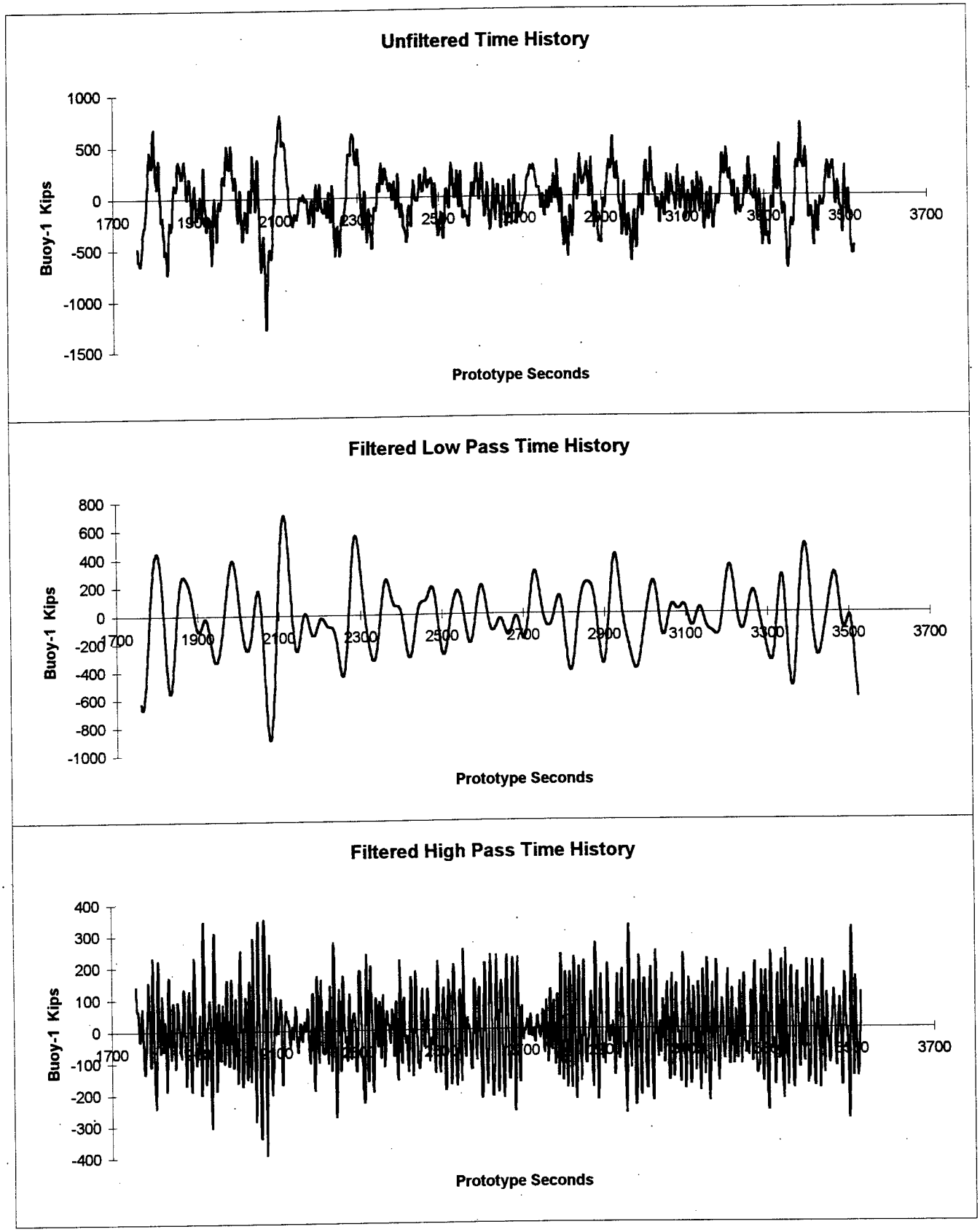

Unfiltered Time History
Surge Feet
30
20
10
0
-10
-20
-30
-40
-50
-60
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
30
20
10
0
-10
-20
-30
-40
-50
-60
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered High Pass Time History
Surge Feet
20
15
10
5
0
-5
-10
-15
1700
3700
Prototype Seconds

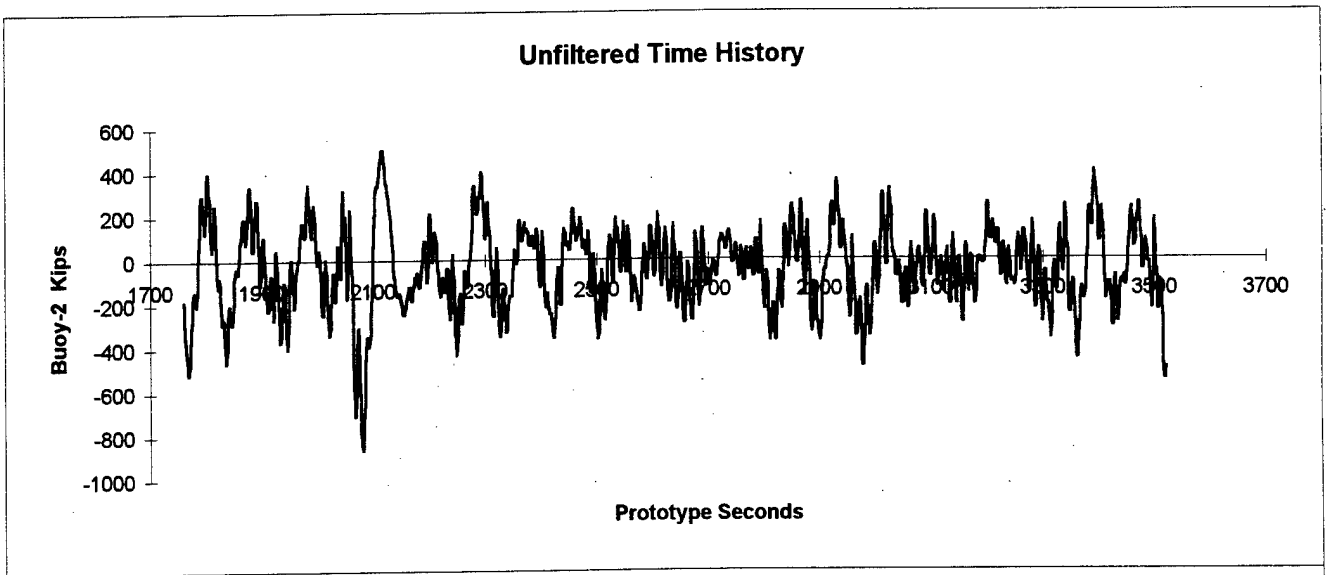

Unfiltered Time History
ML-1 Kips
2000
1800
1600
1400
1200
1000
800
600
400
200
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
1400
1200
1000
800
600
400
200
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
800
600
400
200
0
-200
-400
1700
1900
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds

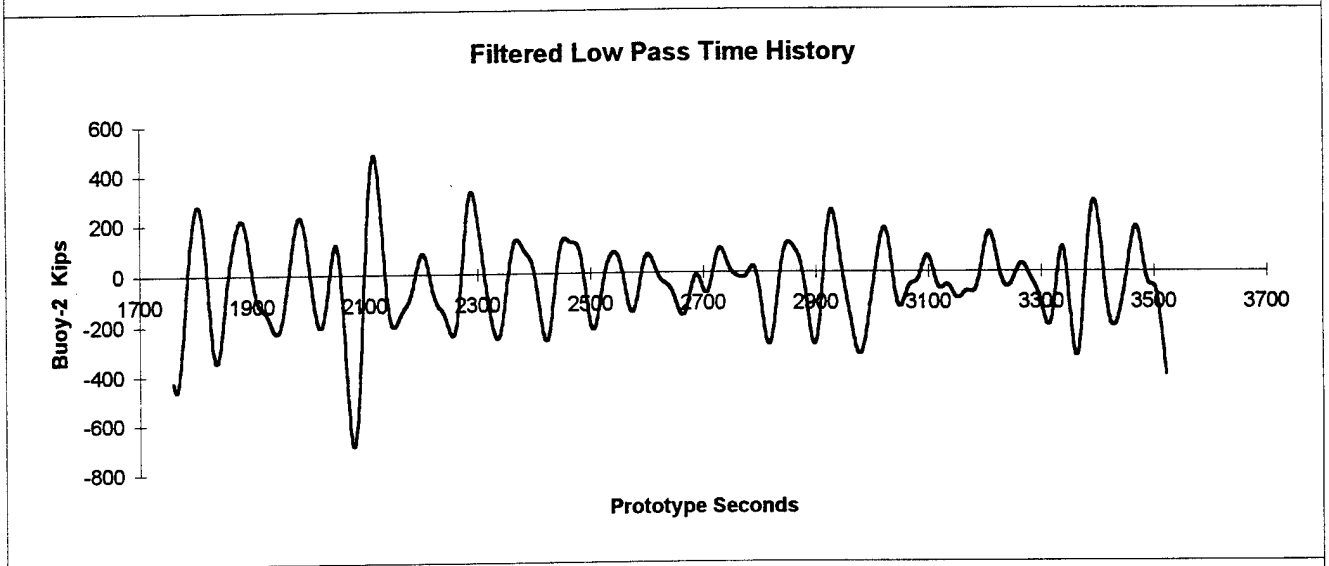

Unfiltered Time History
ML-2 Kips
600
500
400
300
200
100
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds

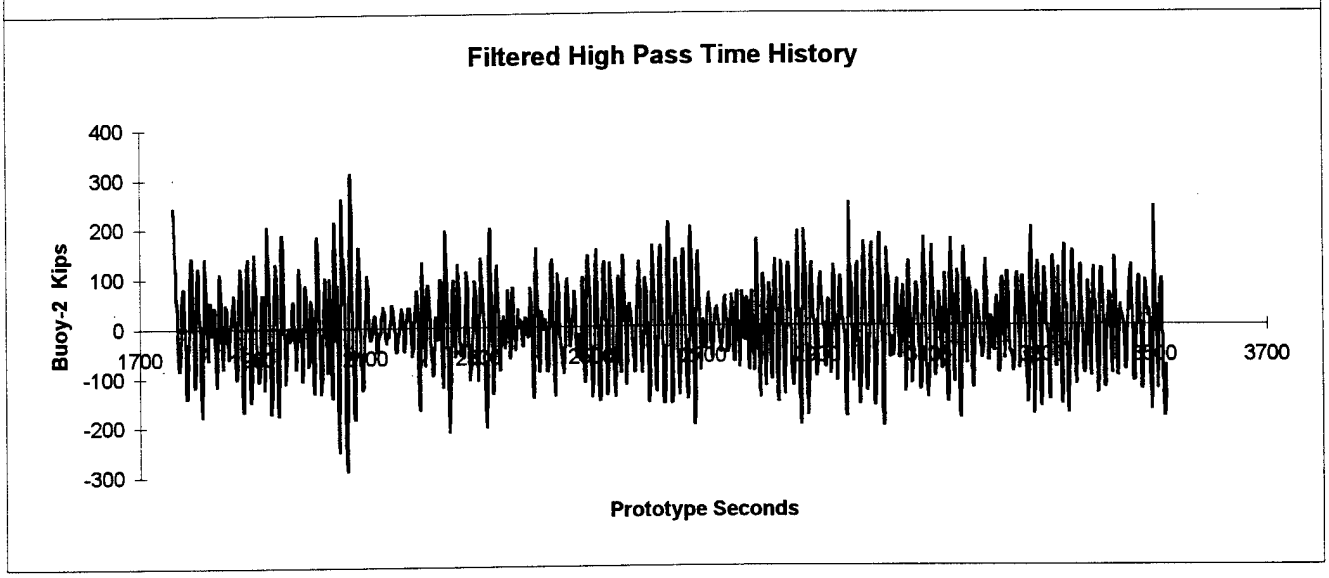

Filtered Low Pass Time History
ML-2 Kips
600
500
400
300
200
100
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds

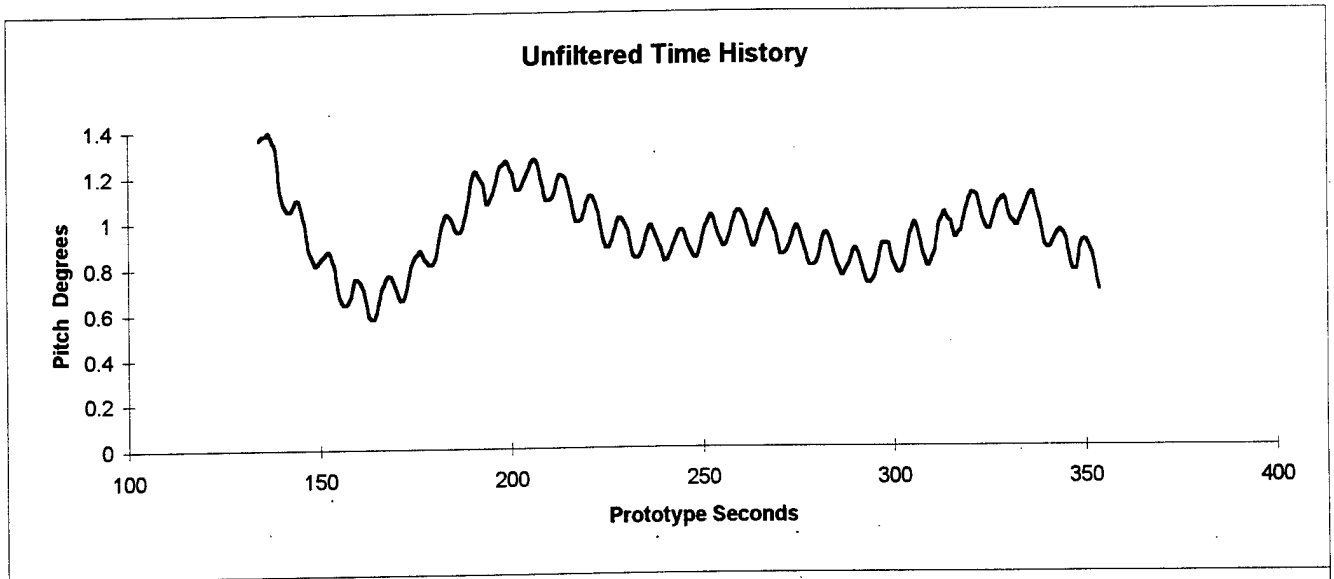

Filtered High Pass Time History
ML-2 Kips
120
100
80
60
40
20
0
-20
-40
-60
-80
1700
1900
3700
Prototype Seconds

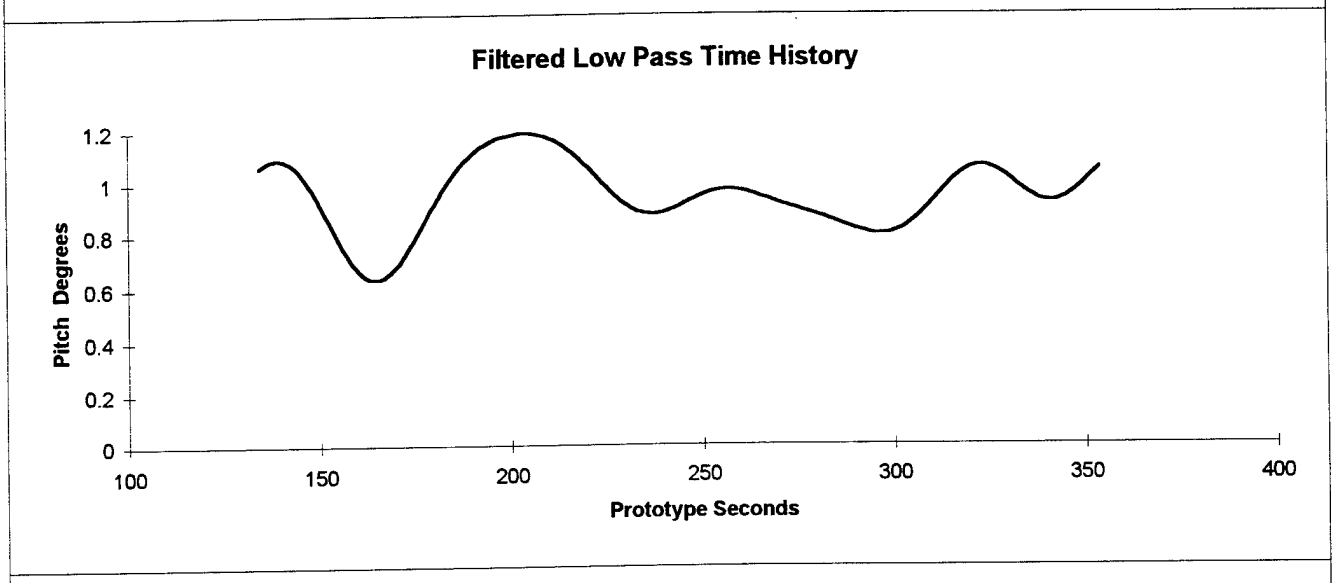

Unfiltered Time History
Buoy-1 Kips
1000
500
0
-500
-1000
-1500
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered Low Pass Time History
Buoy-1 Kips
800
600
400
200
0
-200
-400
-600
-800
-1000
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered High Pass Time History
Buoy-1 Kips
400
300
200
100
0
-100
-200
-300
-400
1700
3700
Prototype Seconds

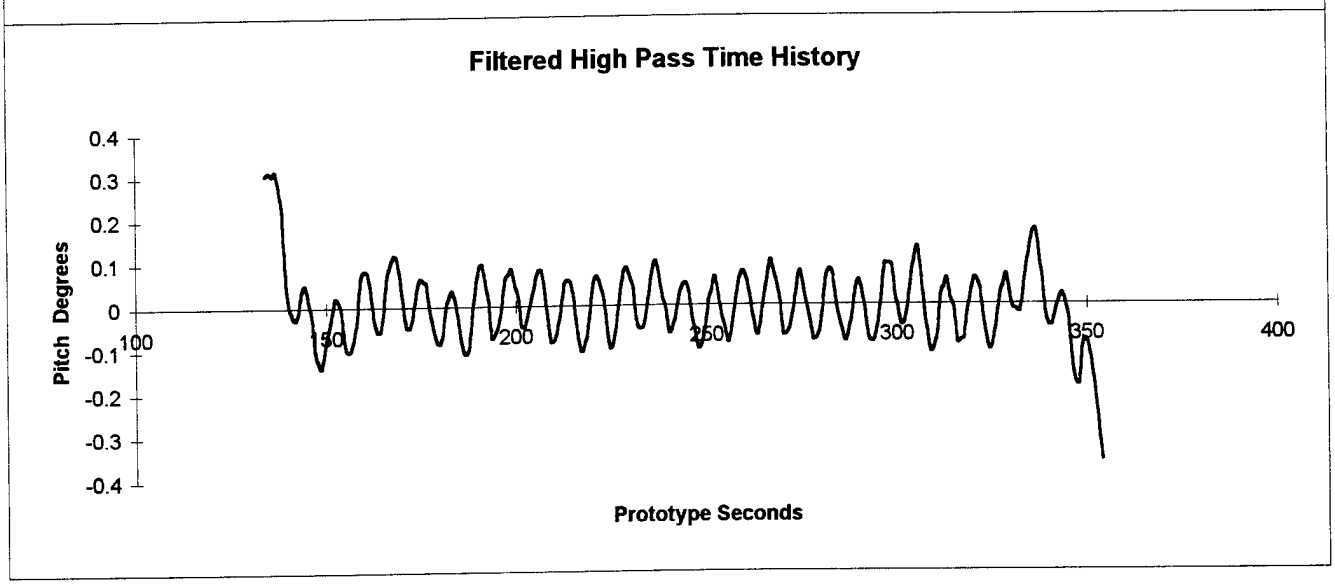

Unfiltered Time History
Buoy-2 Kips
600
400
200
0
-200
-400
-600
-800
-1000
1700
2100
3700
Prototype Seconds

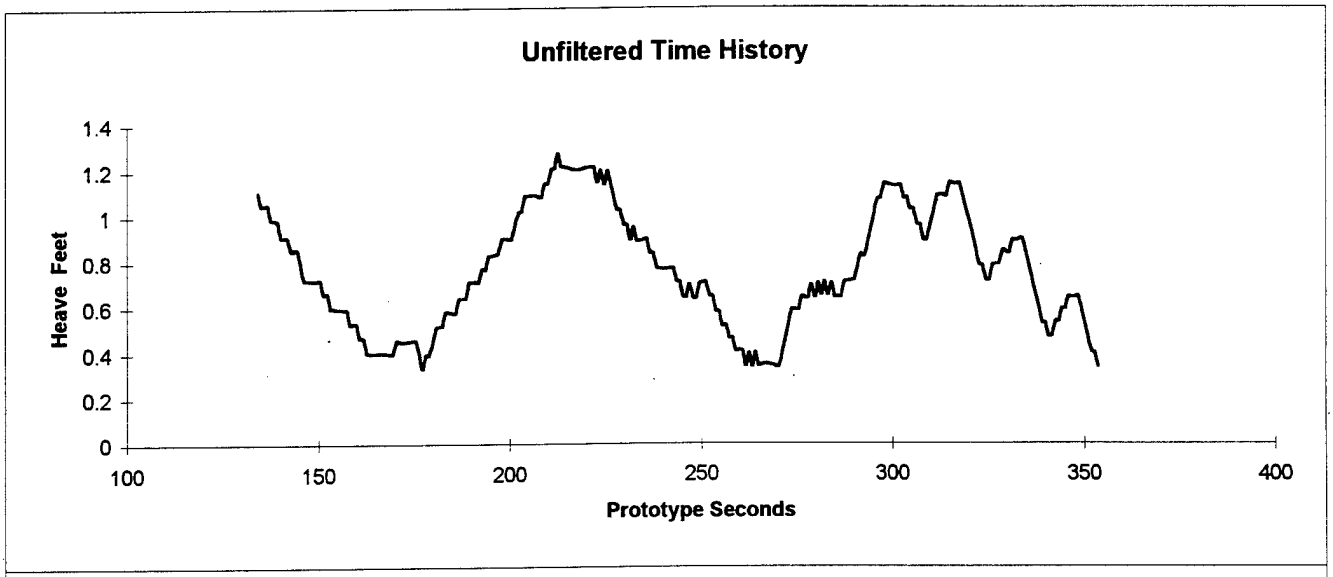

Filtered Low Pass Time History
Buoy-2 Kips
600
400
200
0
-200
-400
-600
-800
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds

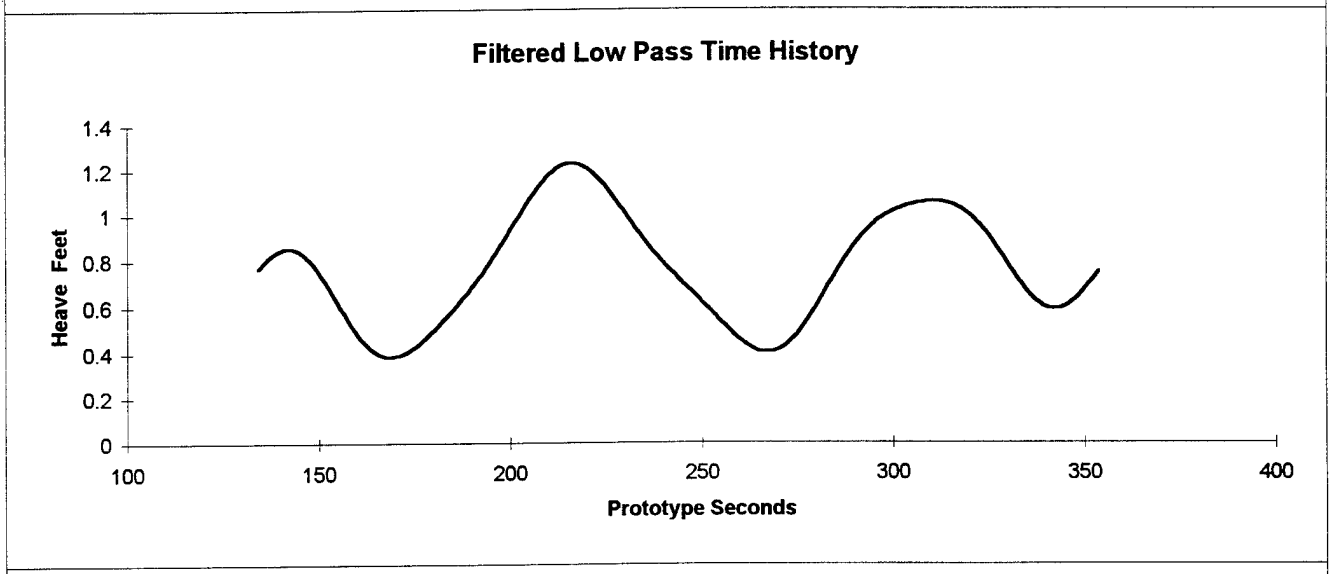

Filtered High Pass Time History
Buoy-2 Kips
400
300
200
100
0
-100
-200
-300
1700
3700
Prototype Seconds

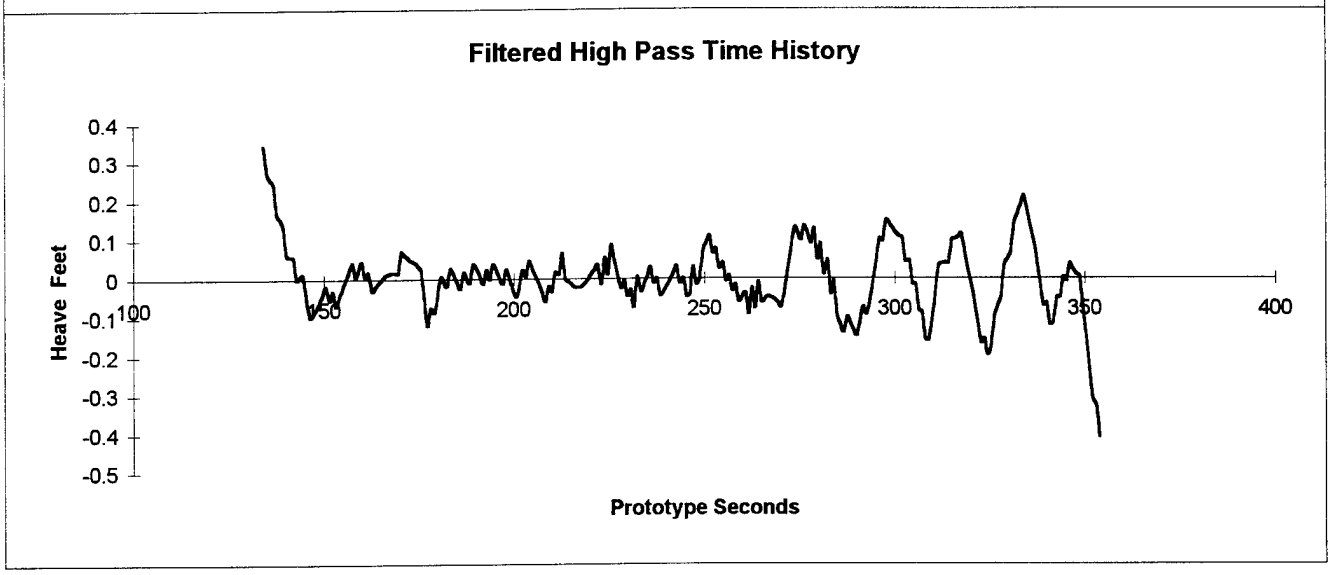

Unfiltered Time History
Pitch Degrees
1.4
1.2
1
0.8
0.6
0.4
0.2
0
100
150
200
250
300
350
400
Prototype Seconds

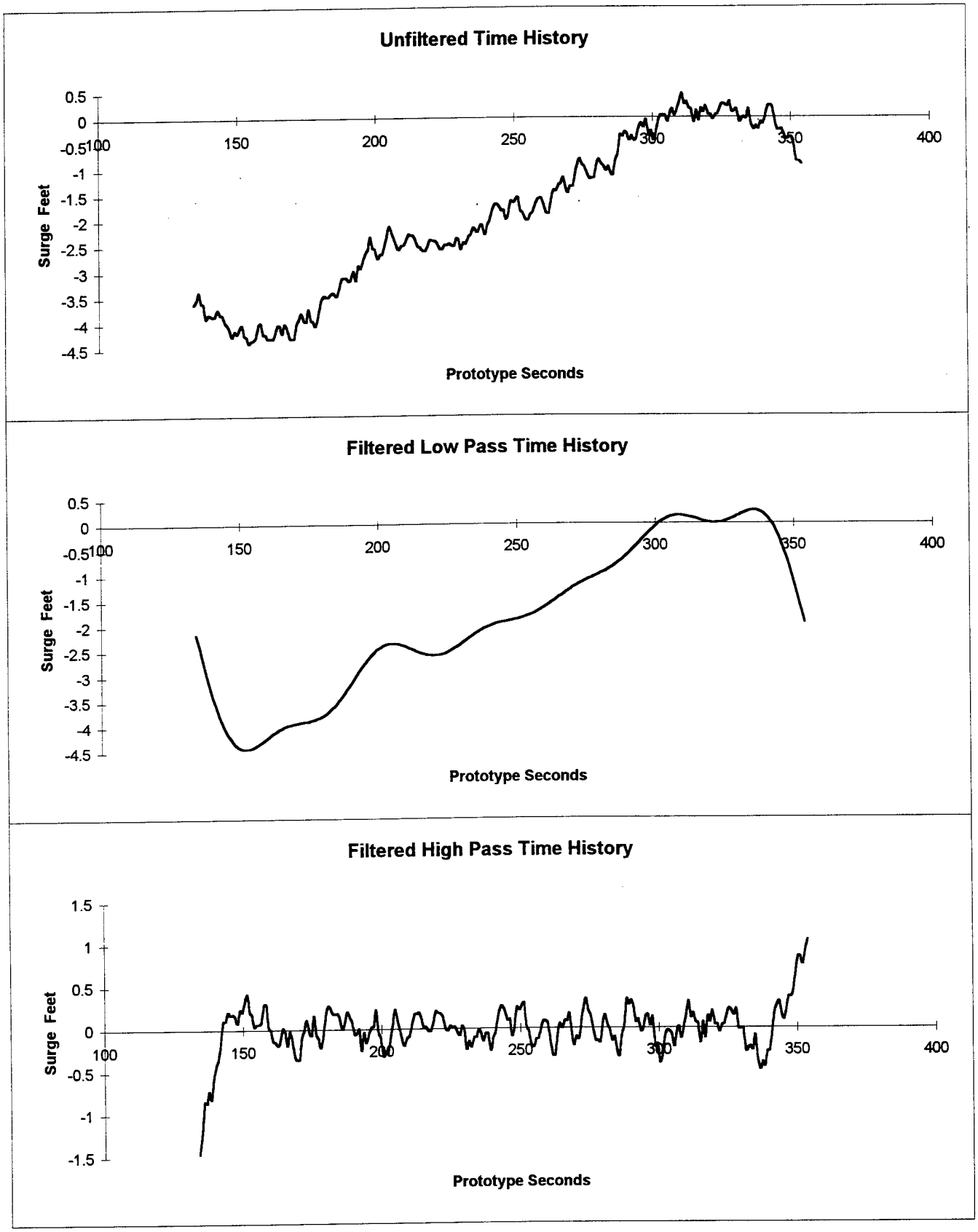

Filtered Low Pass Time History
Pitch Degrees
1.2
1
0.8
0.6
0.4
0.2
0
100
150
200
250
300
350
400
Prototype Seconds

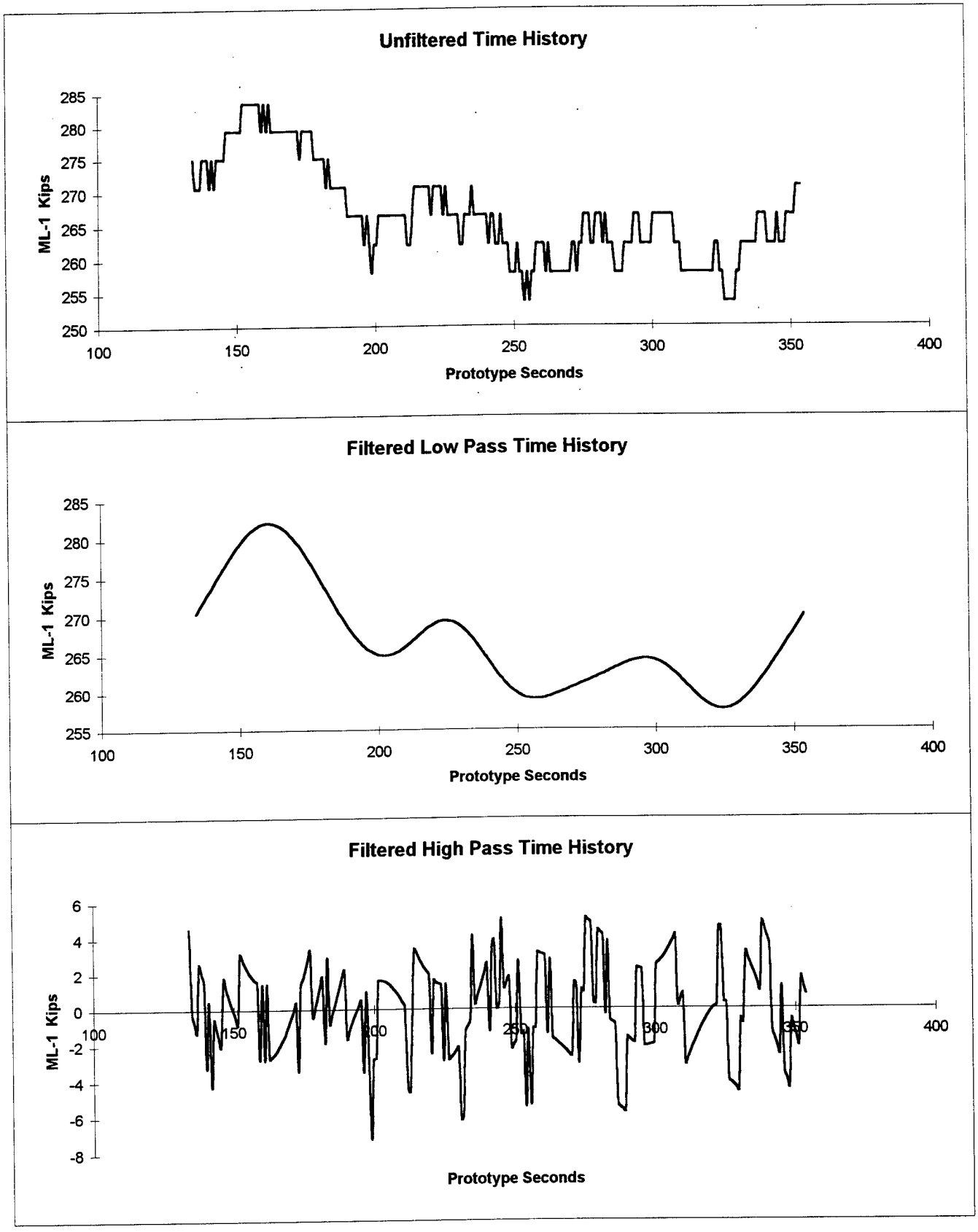

Filtered High Pass Time History
Pitch Degrees
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
100
150
200
250
300
350
400
Prototype Seconds

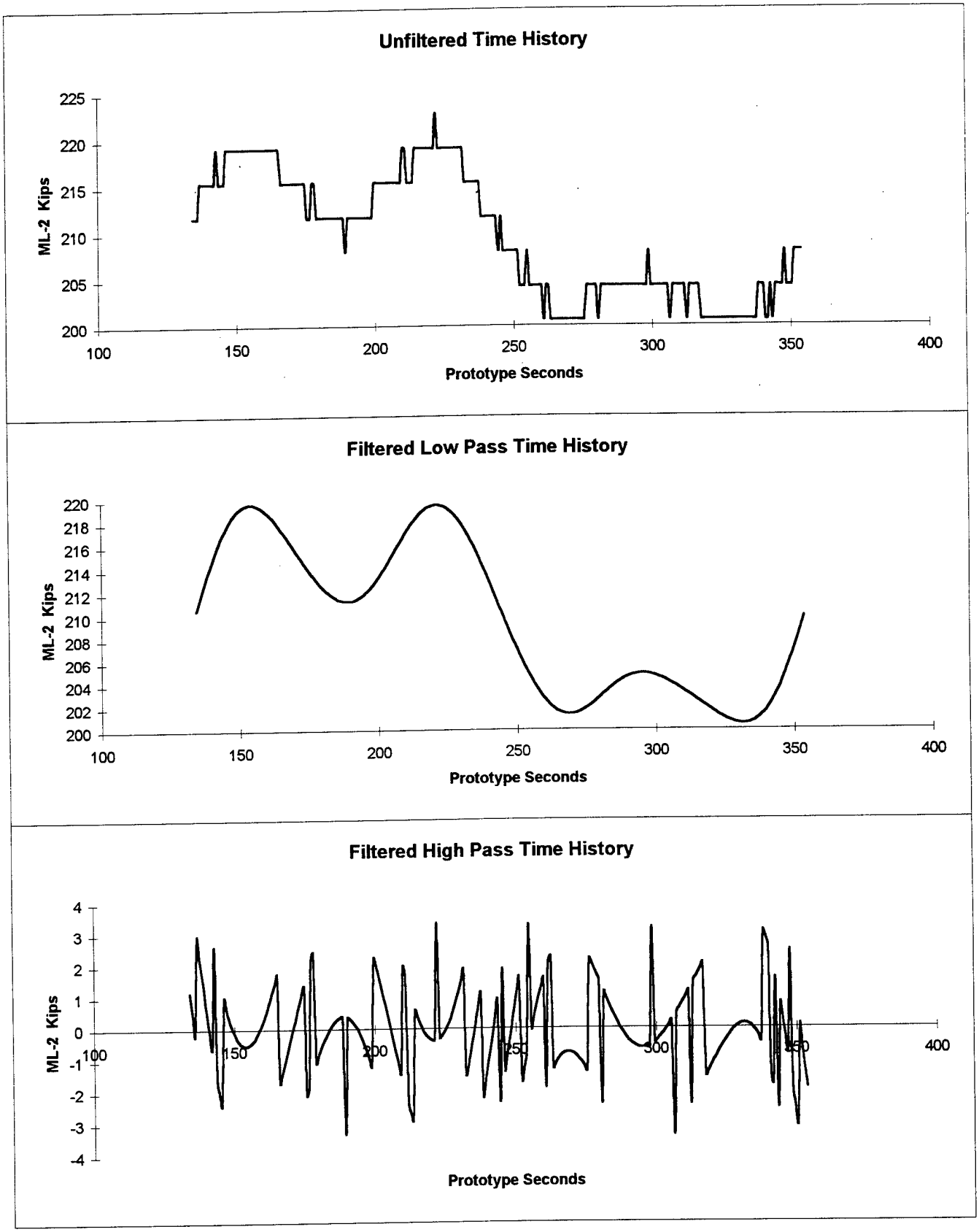

Unfiltered Time History
Heave Feet
1.4
1.2
1
0.8
0.6
0.4
0.2
0
100
150
200
250
300
350
400
Prototype Seconds

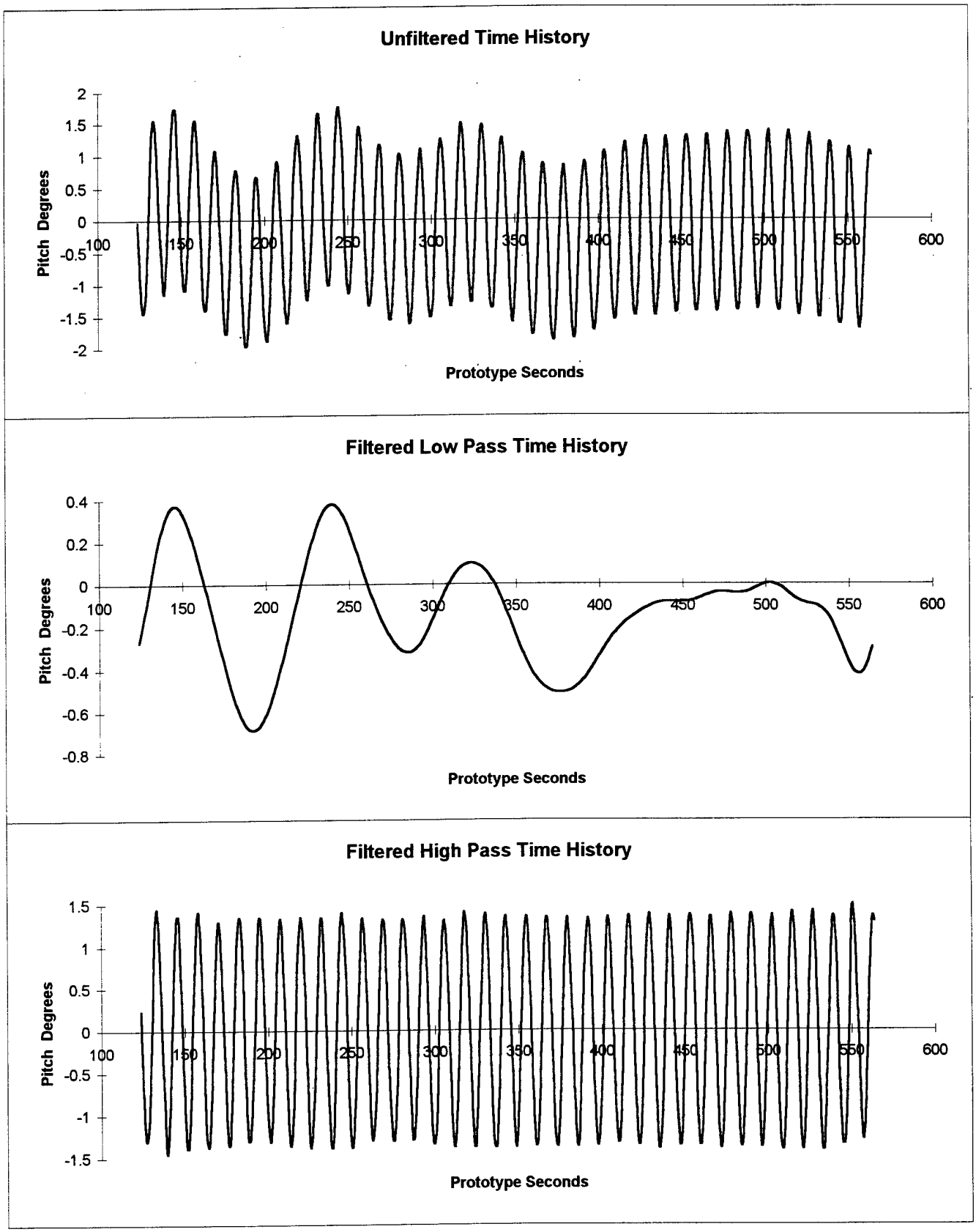

Filtered Low Pass Time History
Heave Feet
1.4
1.2
1
0.8
0.6
0.4
0.2
0
100
150
200
250
300
350
400
Prototype Seconds

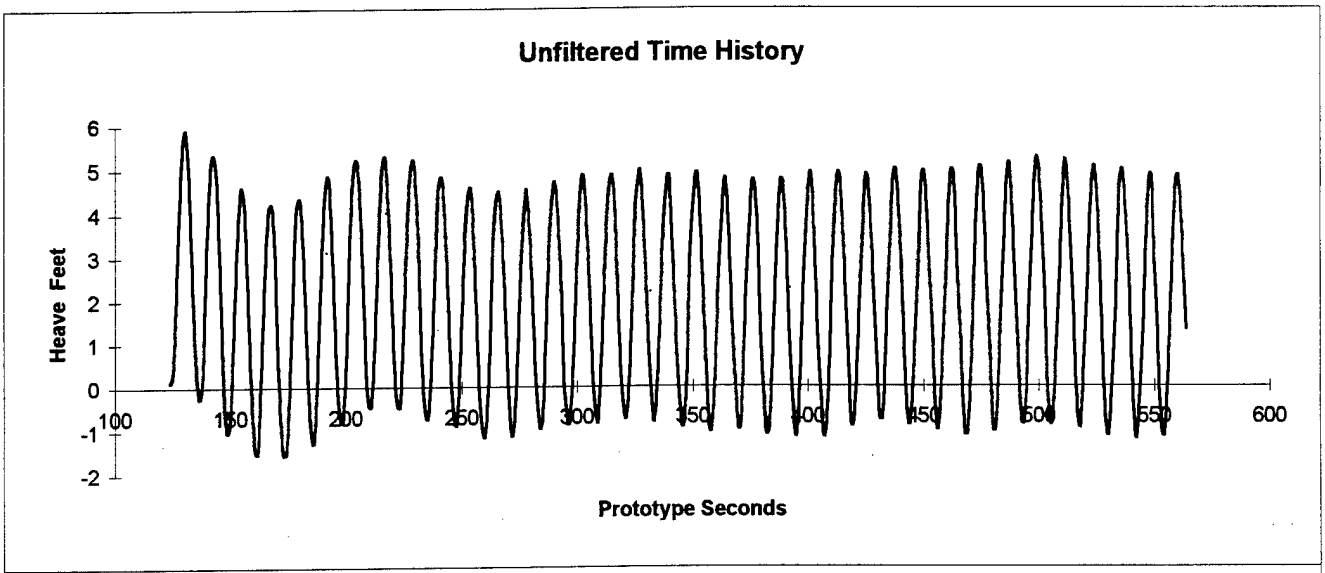

Filtered High Pass Time History
Heave Feet
0.4
0.3
0.2
0.1
0
-0.1
-0.2
-0.3
-0.4
-0.5
100
150
200
250
300
350
400
Prototype Seconds

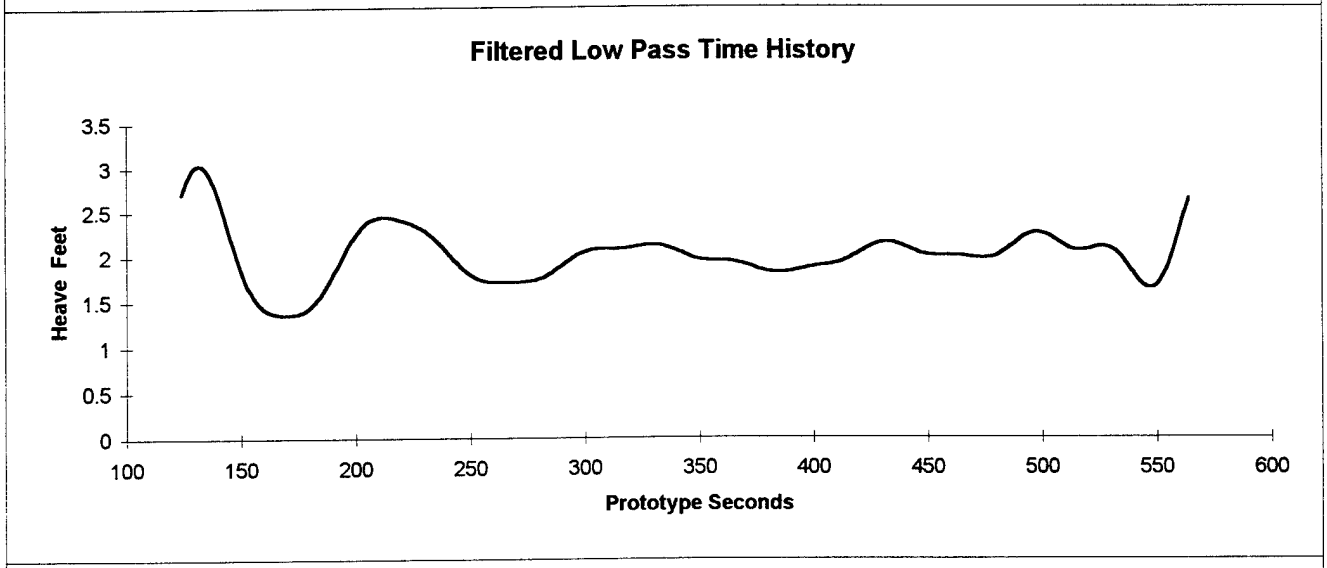

Unfiltered Time History
Surge Feet
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
-4
-4.5
100
150
200
250
300
350
400
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
0.5
0
-0.5
-1
-1.5
-2
-2.5
-3
-3.5
-4
-4.5
100
150
200
250
300
350
400
Prototype Seconds
Filtered High Pass Time History
Surge Feet
1.5
1
0.5
0
-0.5
-1
-1.5
100
150
200
250
300
350
400
Prototype Seconds

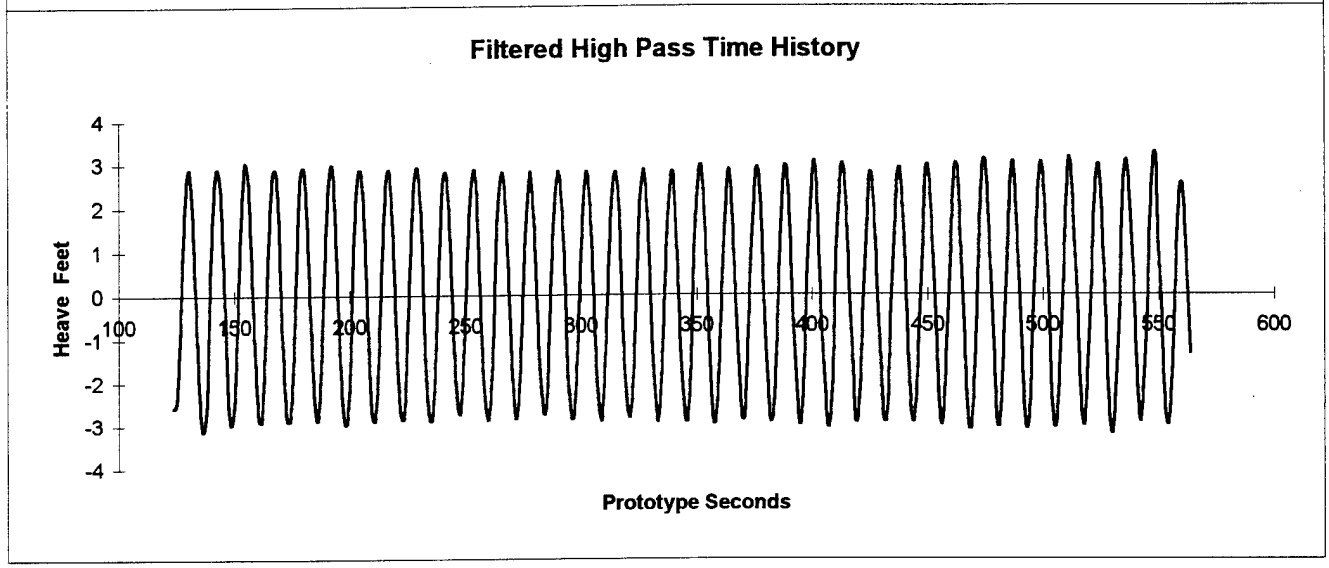

Unfiltered Time History
ML-1 Kips
285
280
275
270
265
260
255
250
100
150
200
250
300
350
400
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
285
280
275
270
265
260
255
100
150
200
250
300
350
400
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
6
4
2
0
-2
-4
-6
-8
100
150
300
350
400
Prototype Seconds

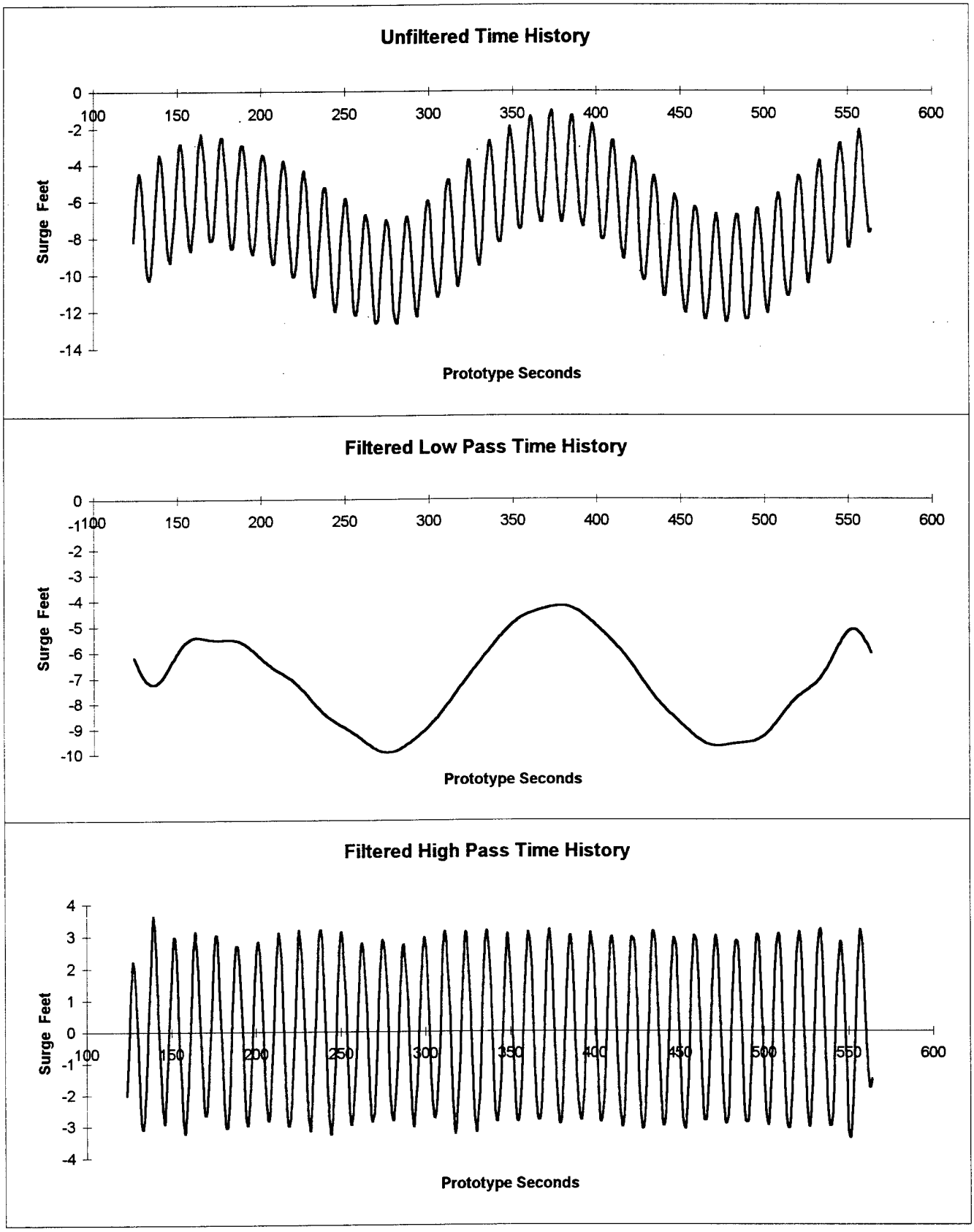

Unfiltered Time History
ML-2 Kips
225
220
215
210
205
200
100
150
200
250
300
350
400
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
220
218
216
214
212
210
208
206
204
202
200
100
150
200
250
300
350
400
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
4
3
2
1
0
-1
-2
-3
-4
100
150
200
250
300
350
400
Prototype Seconds

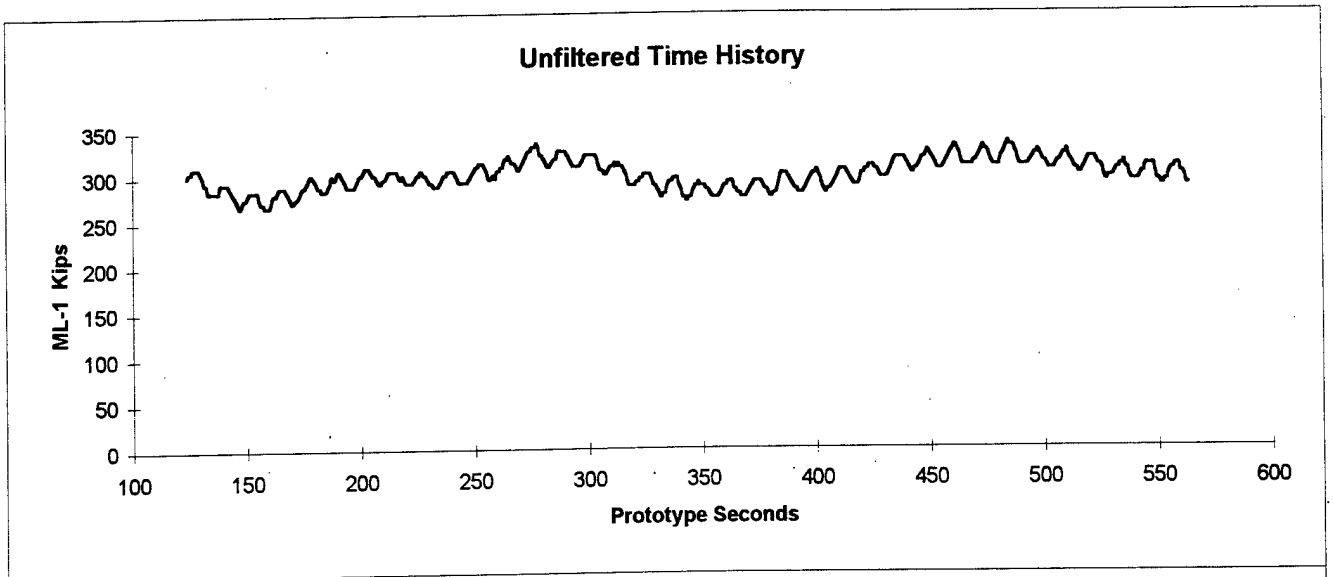

Unfiltered Time History
Pitch Degrees
2
1.5
1
0.5
0
-0.5
-1
-1.5
-2
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
0.4
0.2
0
-0.2
-0.4
-0.6
-0.8
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds

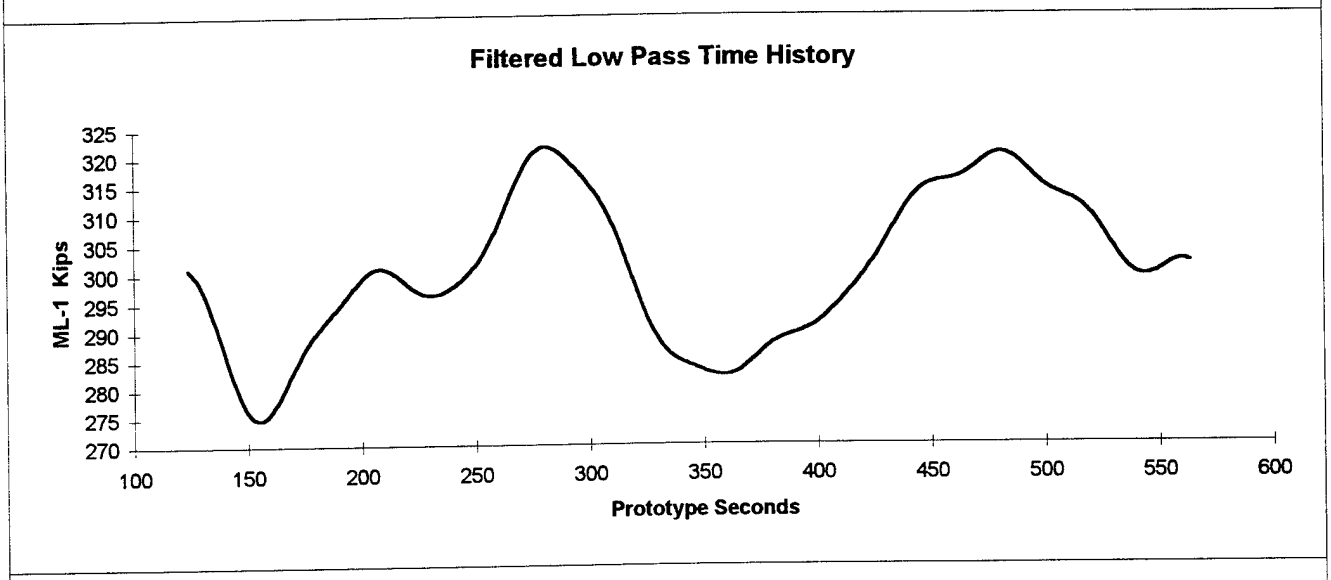

Unfiltered Time History
Heave Feet
6
5
4
3
2
1
0
-1
-2
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds

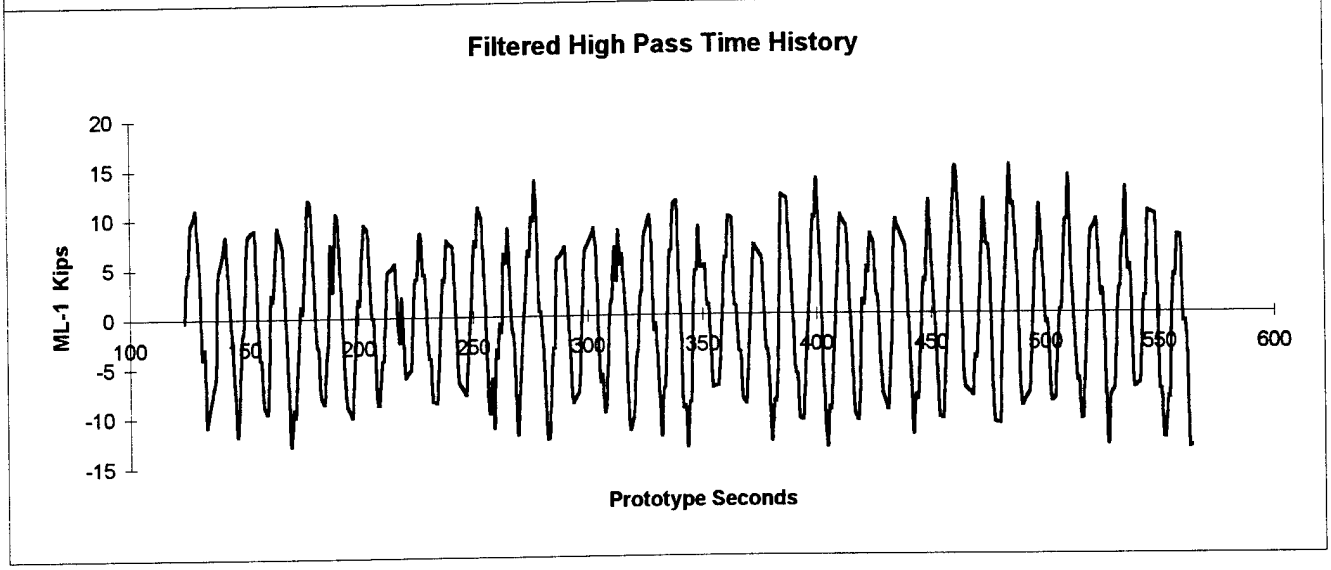

Filtered Low Pass Time History
Heave Feet
3.5
3
2.5
2
1.5
1
0.5
0
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds

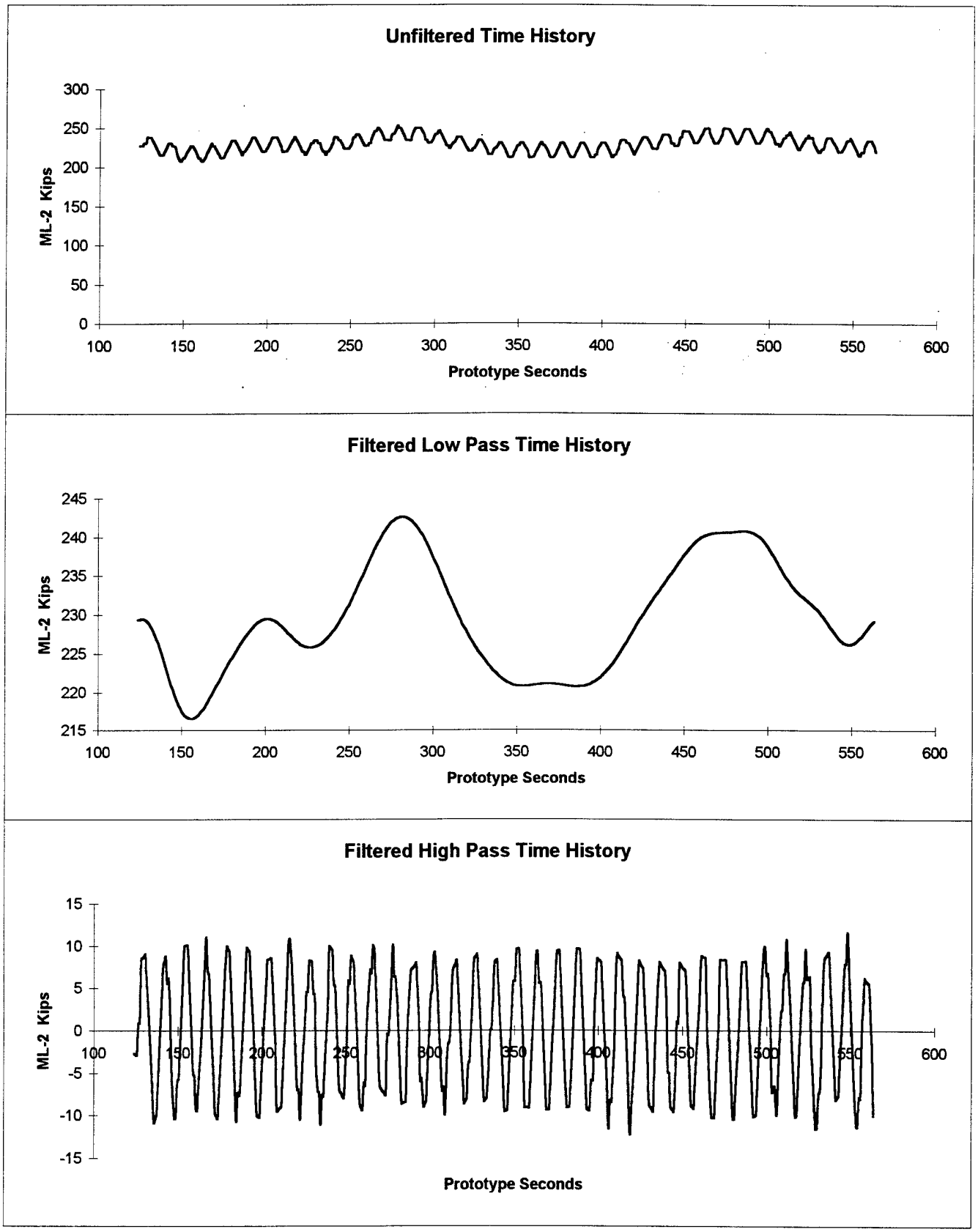

Filtered High Pass Time History
Heave Feet
4
3
2
1
0
-1
-2
-3
-4
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds

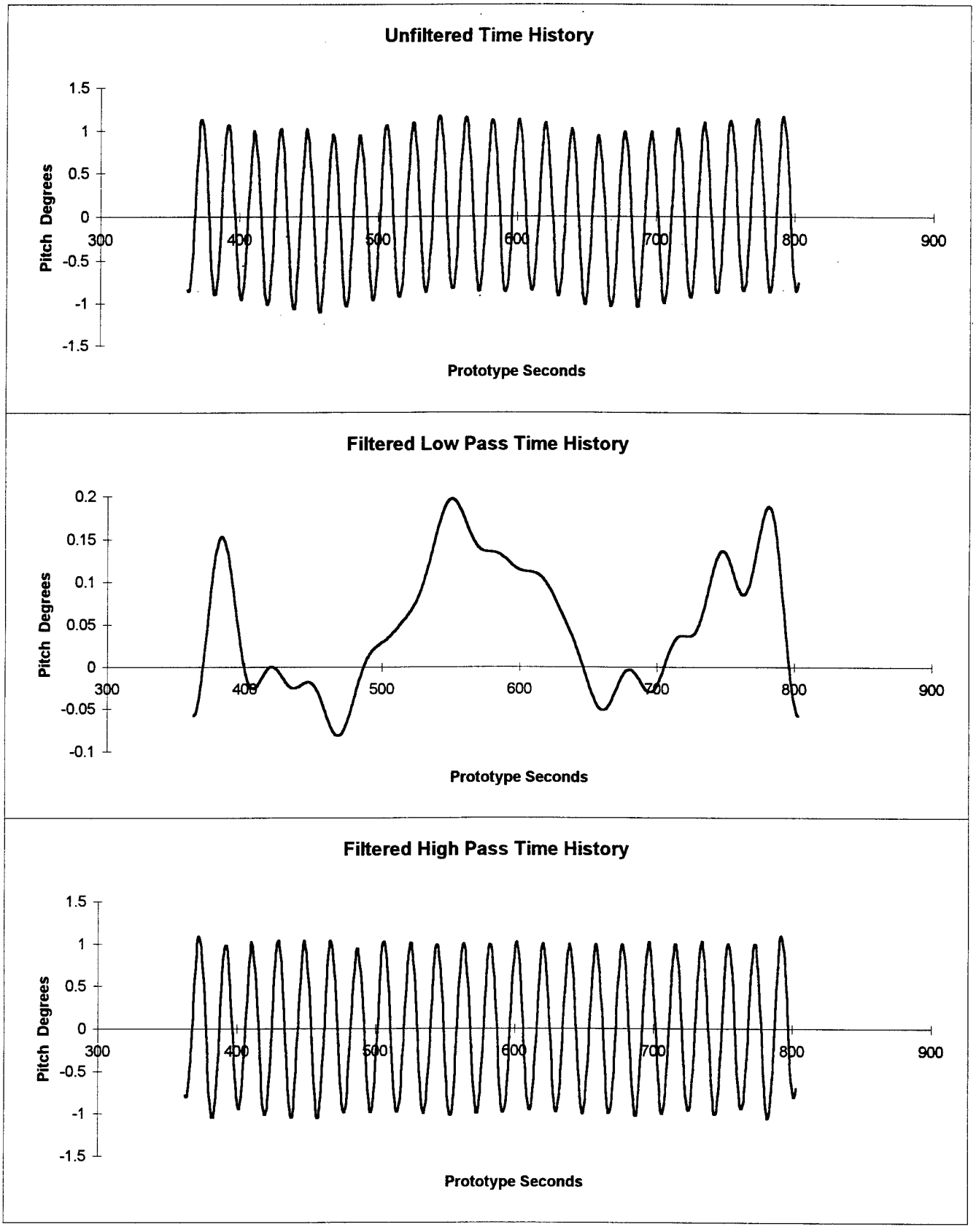

Unfiltered Time History
Surge Feet
0
-2
-4
-6
-8
-10
-12
-14
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds
Filtered High Pass Time History
Surge Feet
4
3
2
1
0
-1
-2
-3
-4
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds

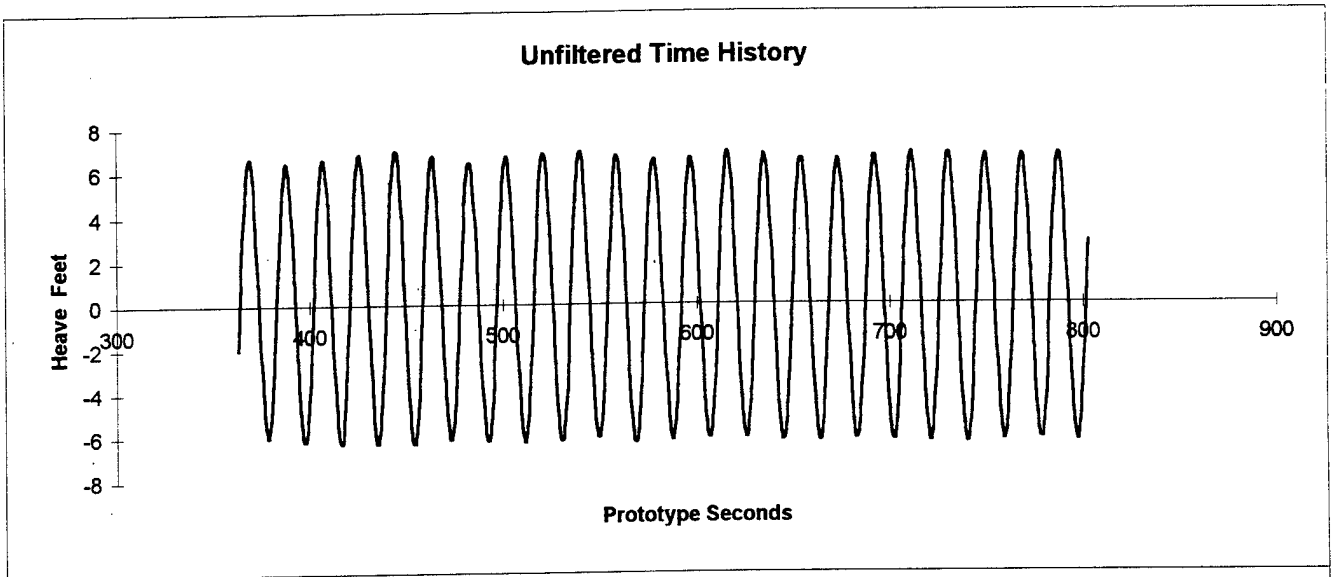

Unfiltered Time History
ML-1 Kips
350
300
250
200
150
100
50
0
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds

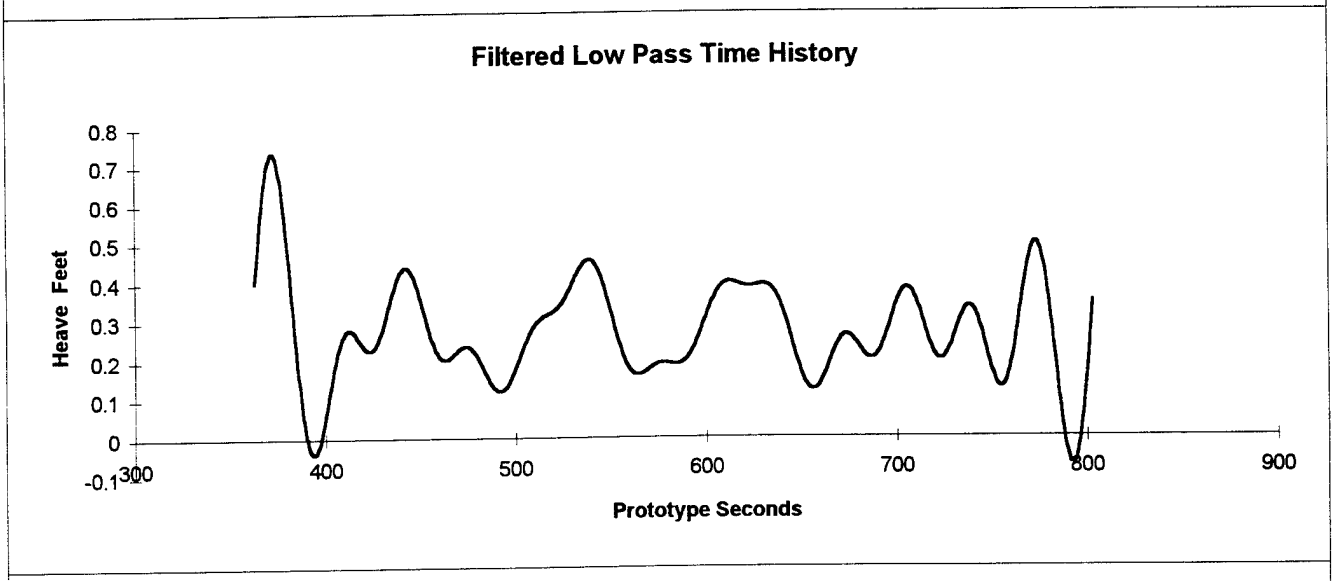

Filtered Low Pass Time History
ML-1 Kips
325
320
315
310
305
300
295
290
285
280
275
270
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds

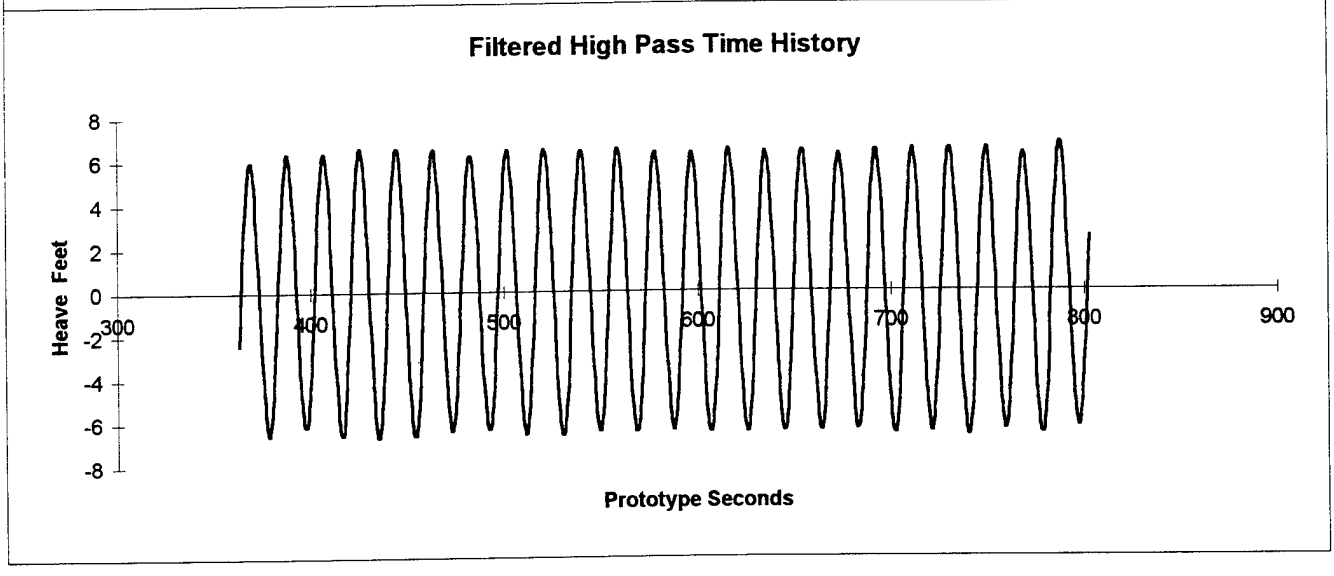

Filtered High Pass Time History
ML-1 Kips
20
15
10
5
0
-5
-10
-15
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds

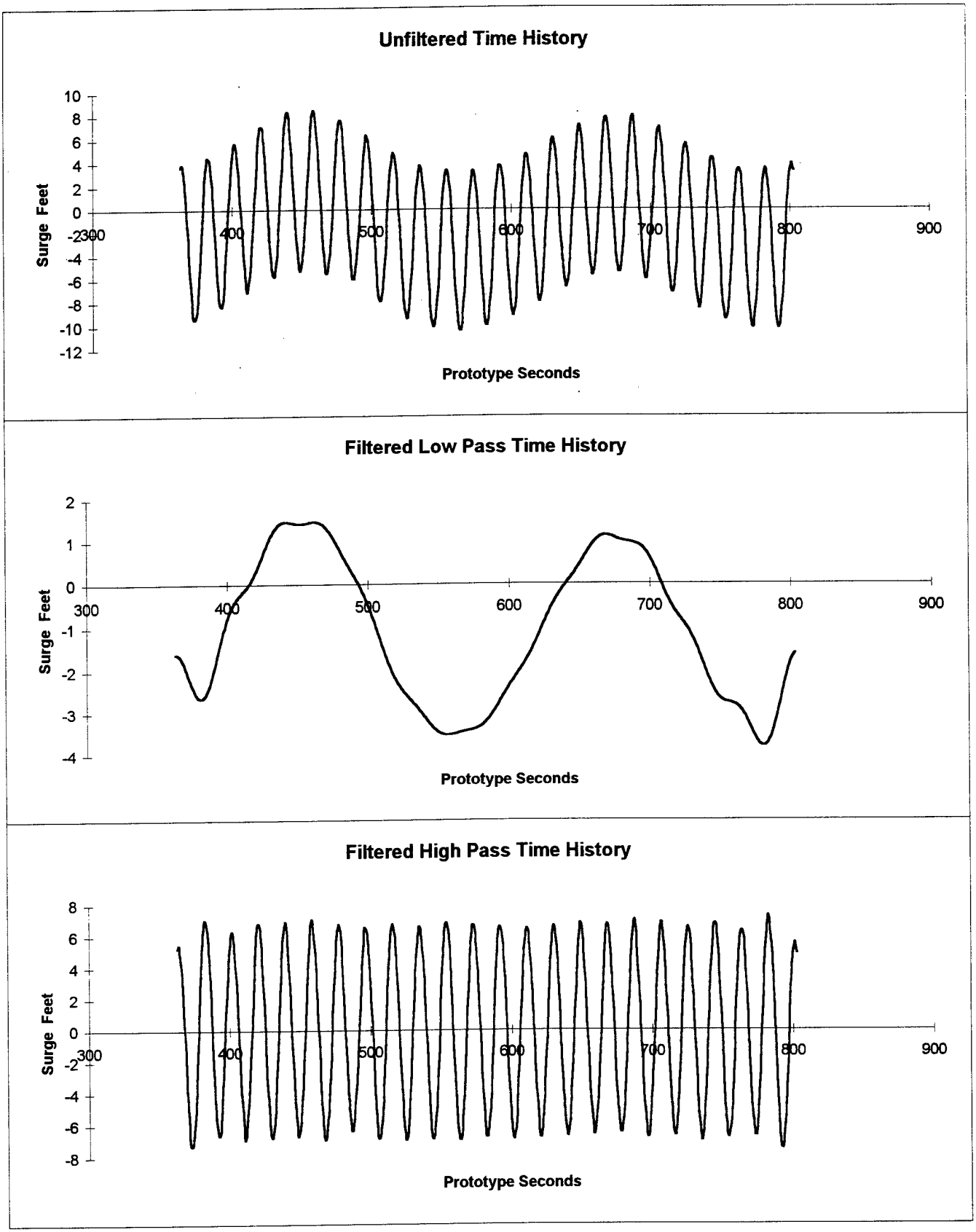

Unfiltered Time History
ML-2 Kips
300
250
200
150
100
50
0
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
245
240
235
230
225
220
215
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
15
10
5
0
-5
-10
-15
100
150
200
250
300
350
400
450
500
550
600
Prototype Seconds

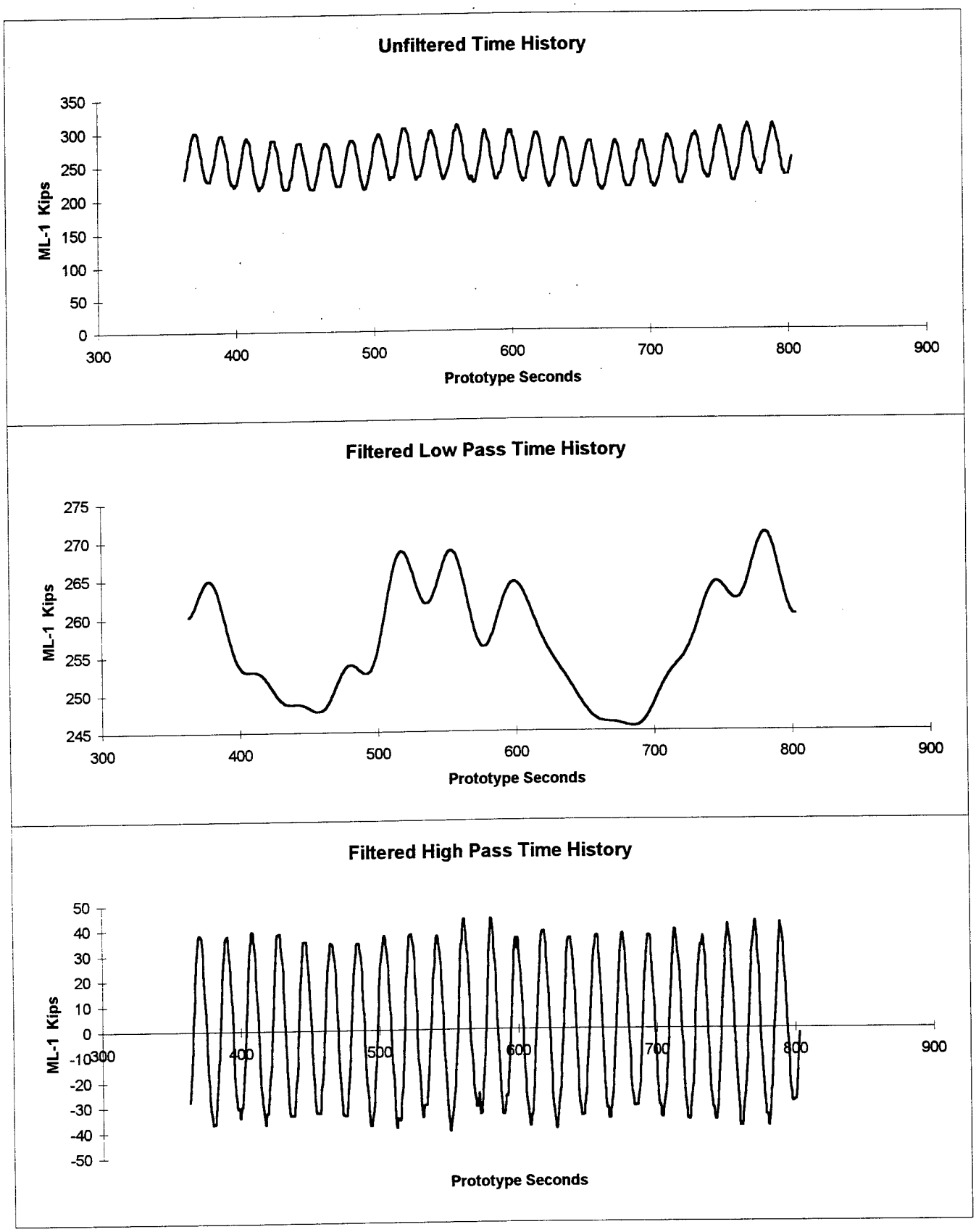

Unfiltered Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
300
400
500
600
700
800
900
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
0.2
0.15
0.1
0.05
0
-0.05
-0.1
300
400
500
600
700
800
900
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
1.5
1
0.5
0
-0.5
-1
-1.5
300
400
500
600
700
800
900
Prototype Seconds

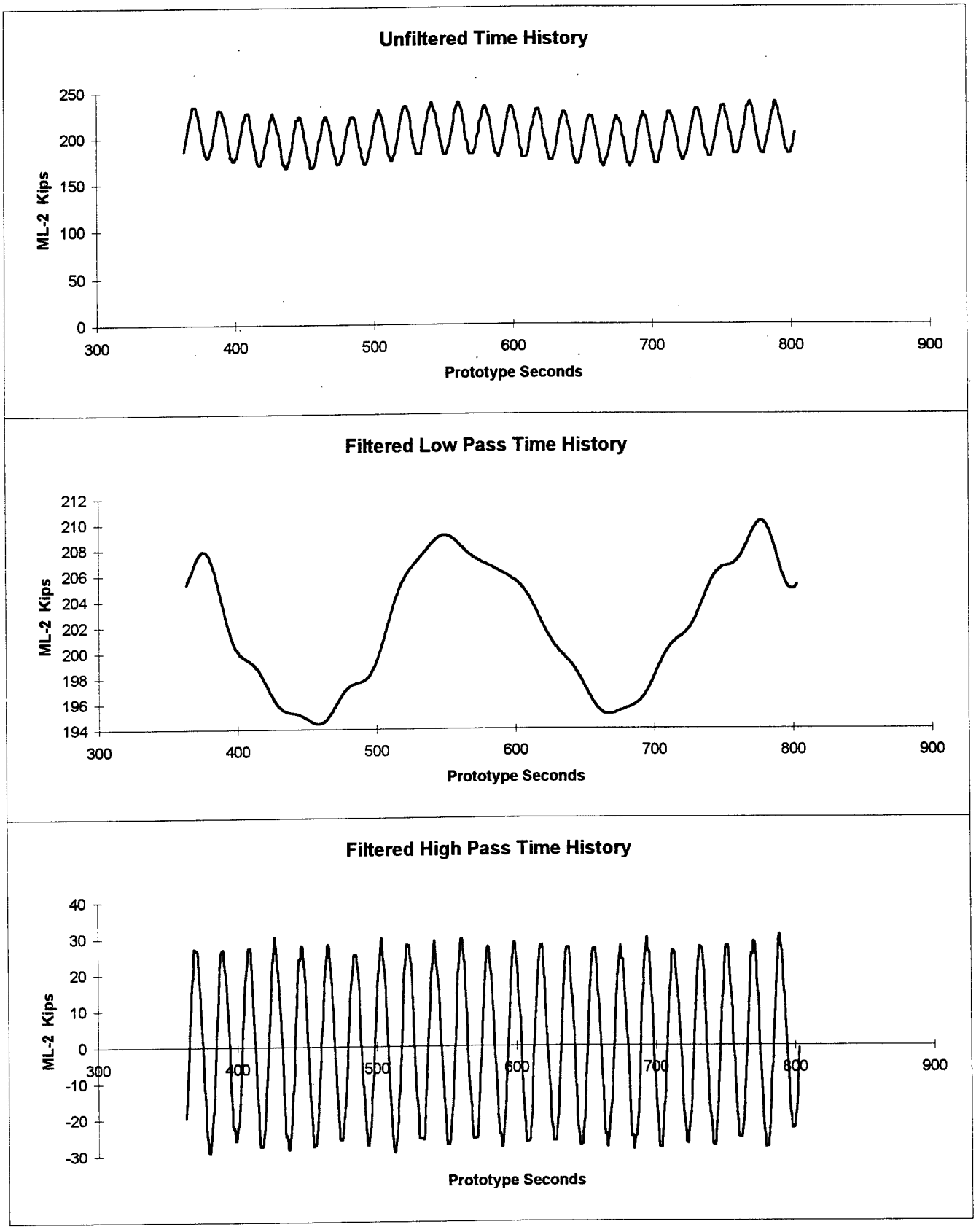

Unfiltered Time History
Heave Feet
8
6
4
2
0
-2
-4
-6
-8
300
400
500
600
700
800
900
Prototype Seconds

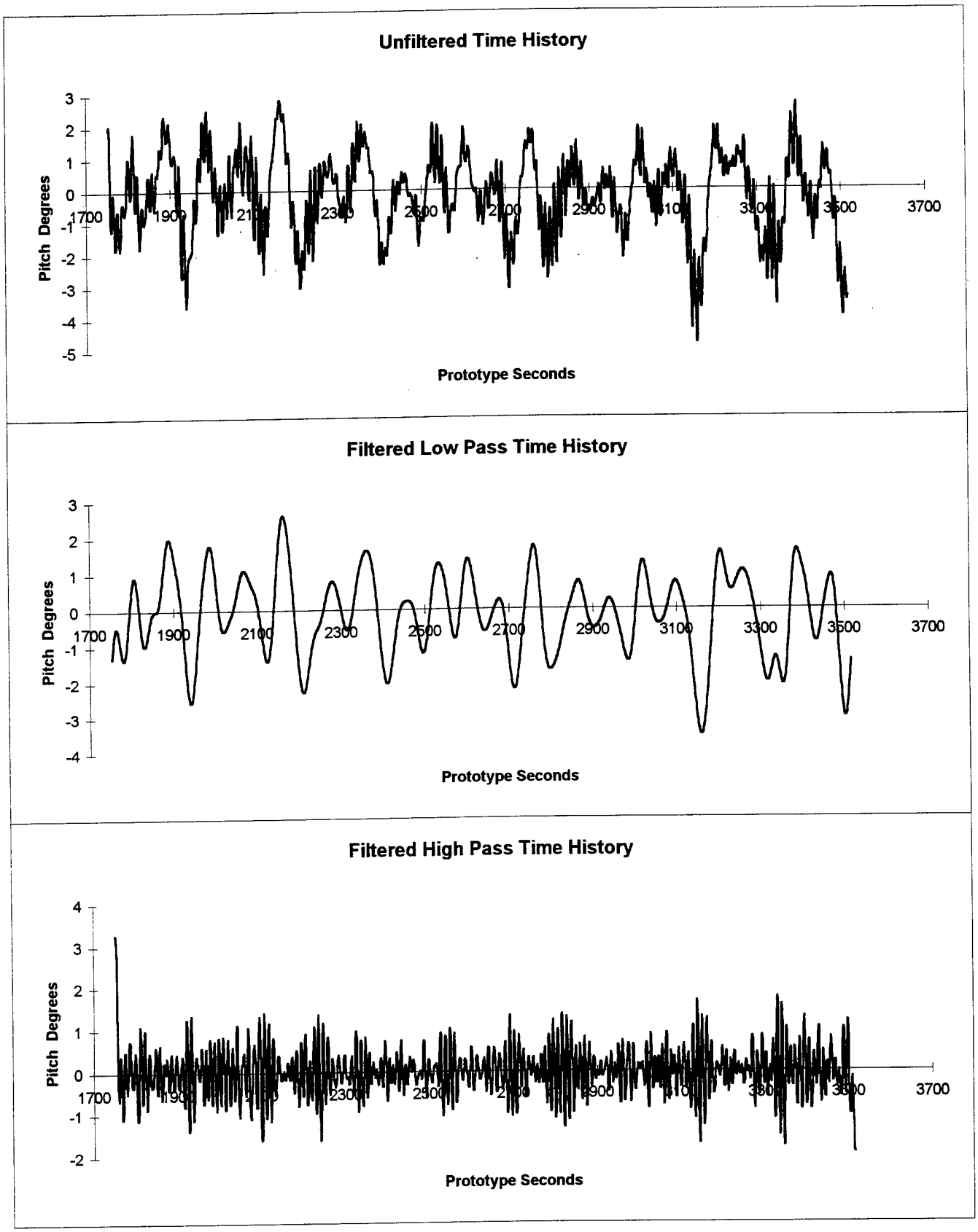

Filtered Low Pass Time History
Heave Feet
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0
-0.1
300
400
500
600
700
800
900
Prototype Seconds

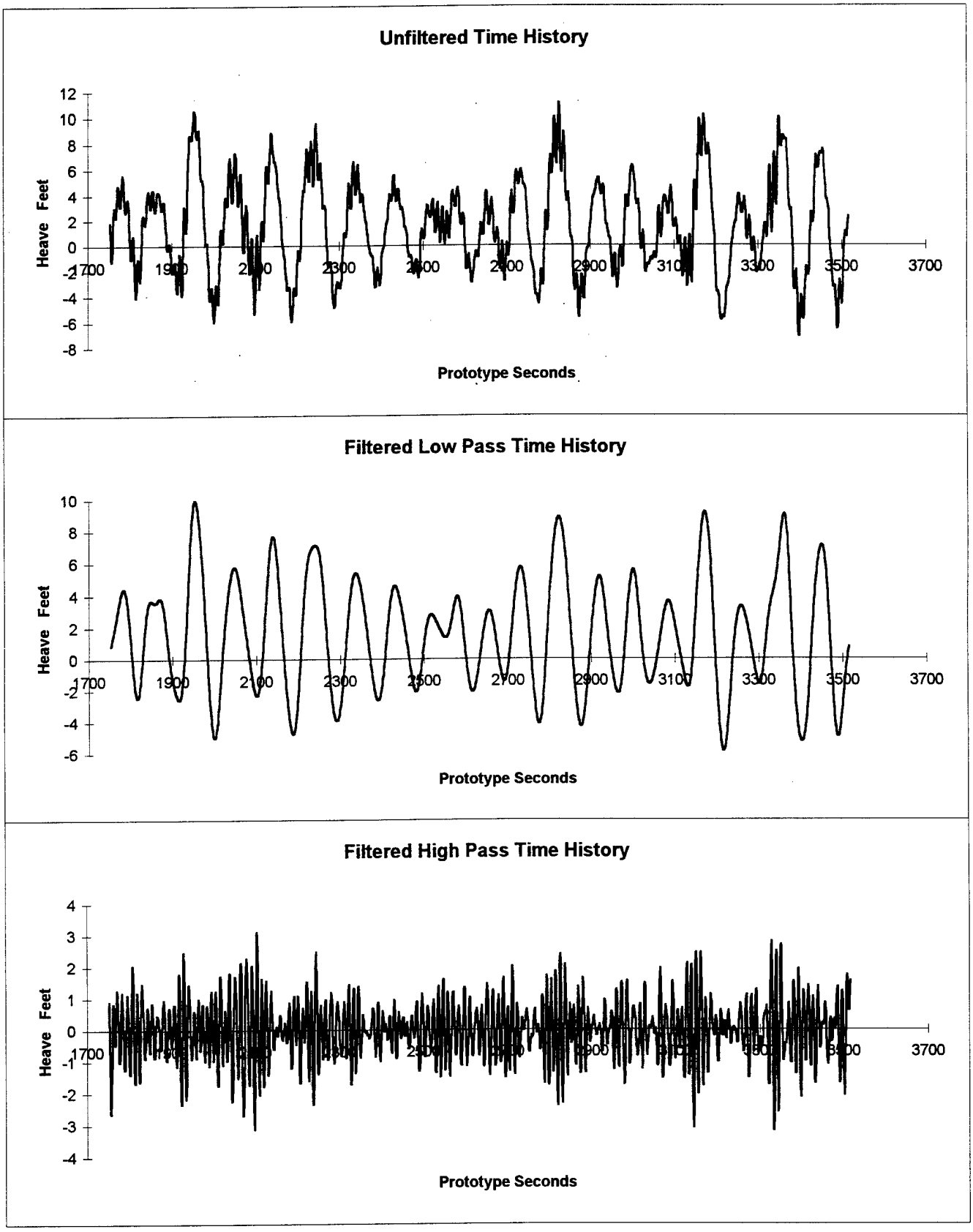

Filtered High Pass Time History
Heave Feet
8
6
4
2
0
-2
-4
-6
-8
300
400
500
600
700
800
900
Prototype Seconds

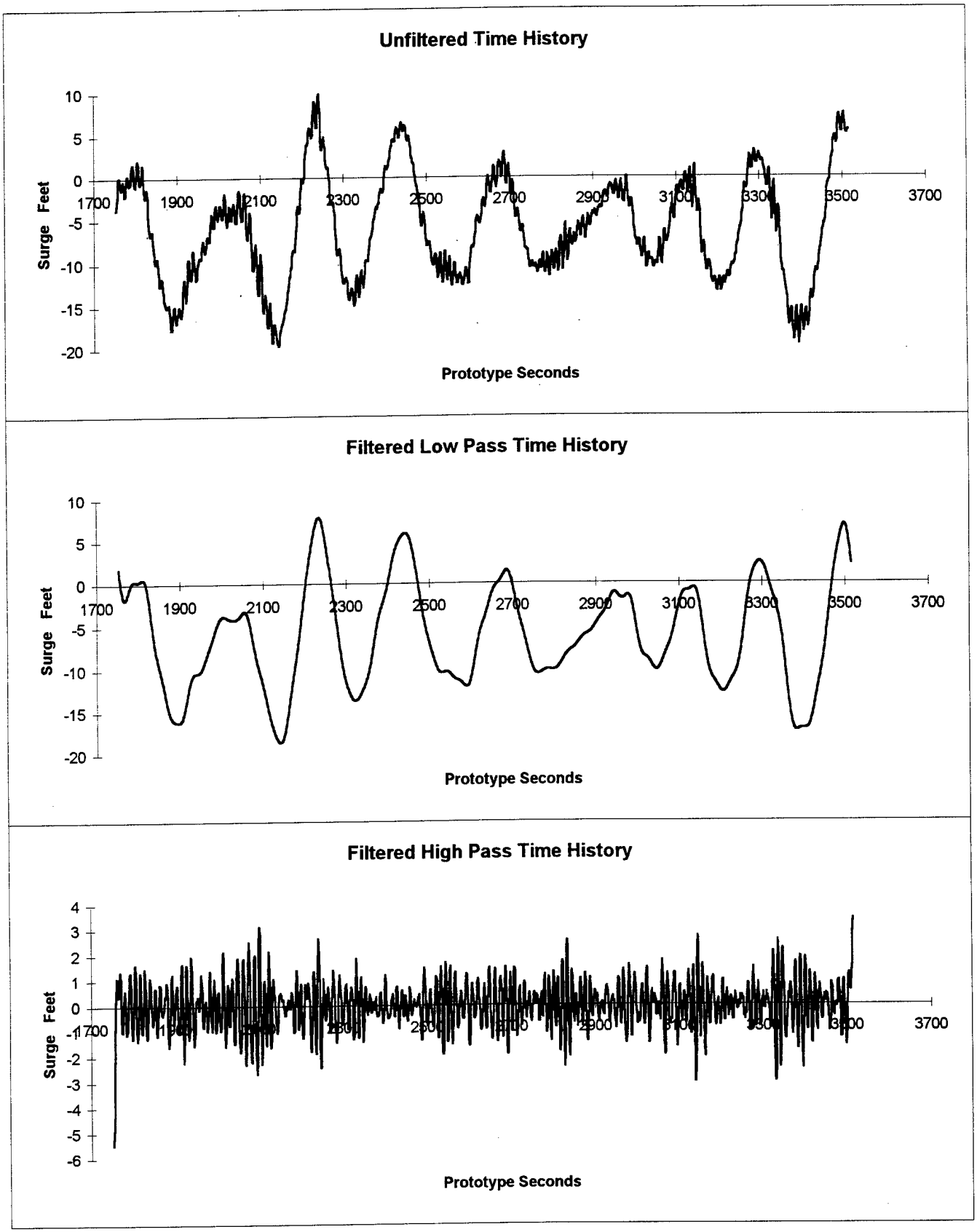

Unfiltered Time History
Surge Feet
10
8
6
4
2
0
-2
-4
-6
-8
-10
-12
300
400
500
600
700
800
900
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
2
1
0
-1
-2
-3
-4
300
400
500
600
700
800
900
Prototype Seconds
Filtered High Pass Time History
Surge Feet
8
6
4
2
0
-2
-4
-6
-8
300
400
500
600
700
800
900
Prototype Seconds

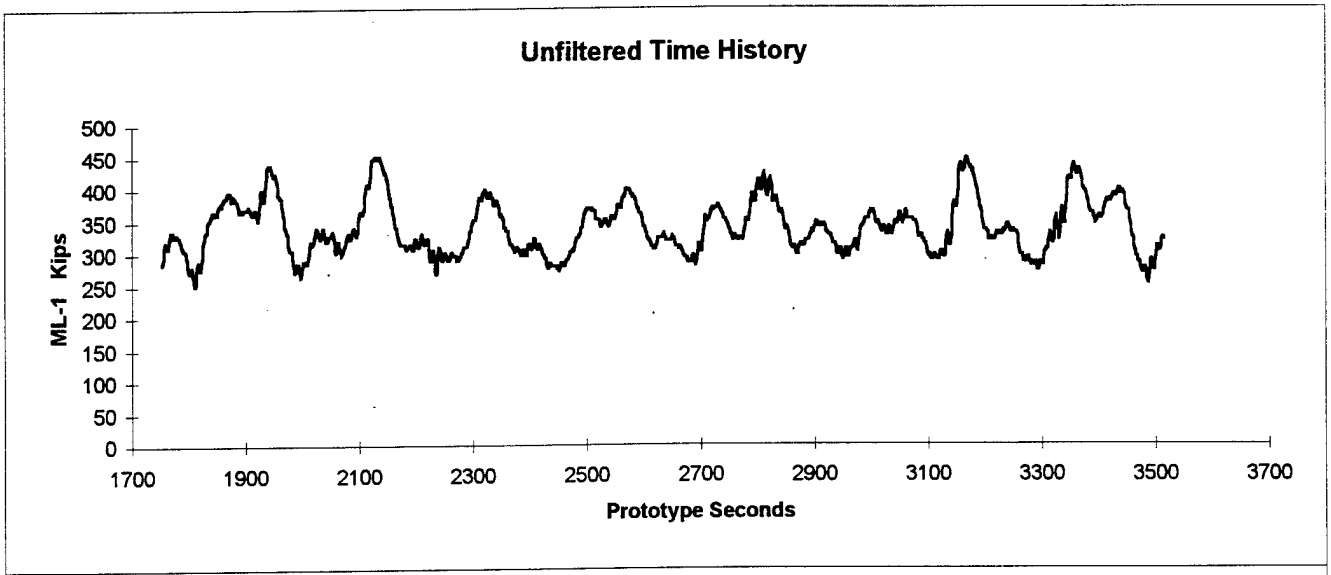

Unfiltered Time History
ML-1 Kips
350
300
250
200
150
100
50
0
300
400
500
600
700
800
900
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
275
270
265
260
255
250
245
300
400
500
600
700
800
900
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
50
40
30
20
10
0
-10
-20
-30
-40
-50
300
400
500
600
700
800
900
Prototype Seconds

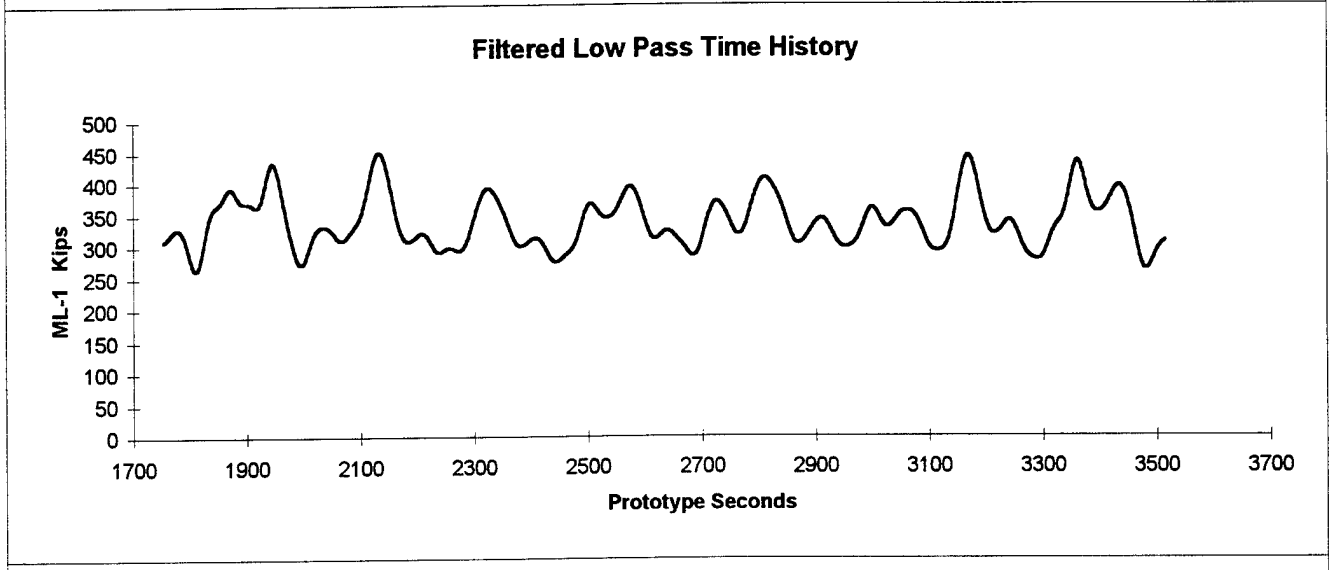

Unfiltered Time History
ML-2 Kips
250
200
150
100
50
0
300
400
500
600
700
800
900
Prototype Seconds
Filtered Low Pass Time History
ML-2 Kips
212
210
208
206
204
202
200
198
196
194
300
400
500
600
700
800
900
Prototype Seconds
Filtered High Pass Time History
ML-2 Kips
40
30
20
10
0
-10
-20
-30
300
400
500
600
700
800
900
Prototype Seconds

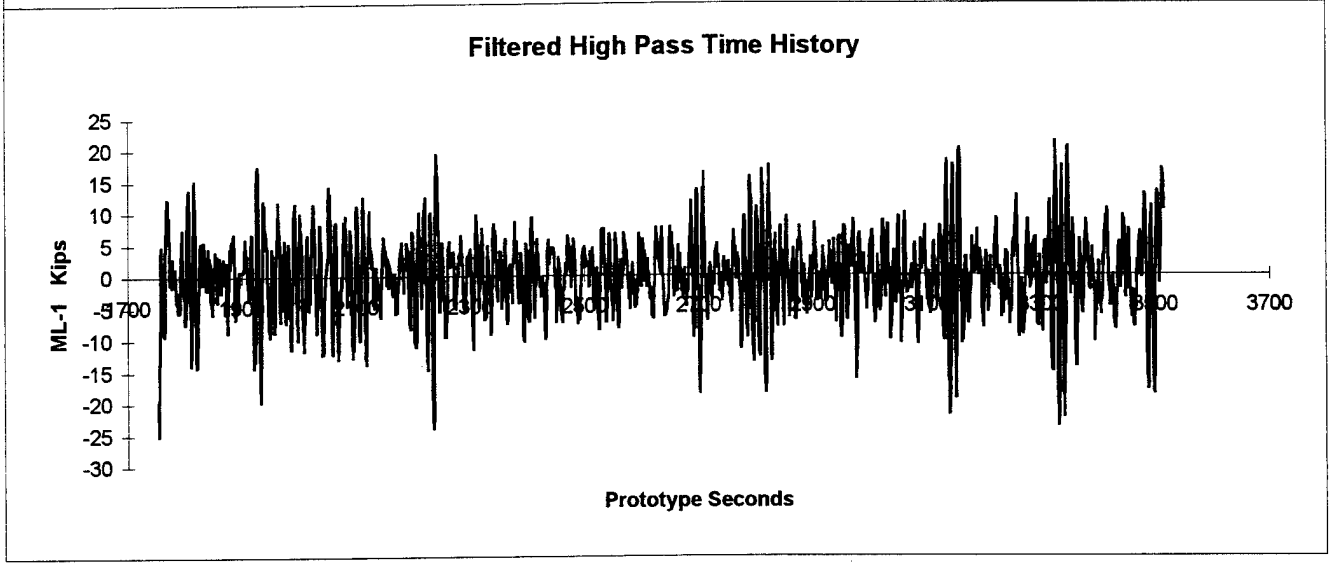

Unfiltered Time History
Pitch Degrees
3
2
1
0
-1
-2
-3
-4
-5
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered Low Pass Time History
Pitch Degrees
3
2
1
0
-1
-2
-3
-4
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered High Pass Time History
Pitch Degrees
4
3
2
1
0
-1
-2
1700
2300
2500
3700
Prototype Seconds

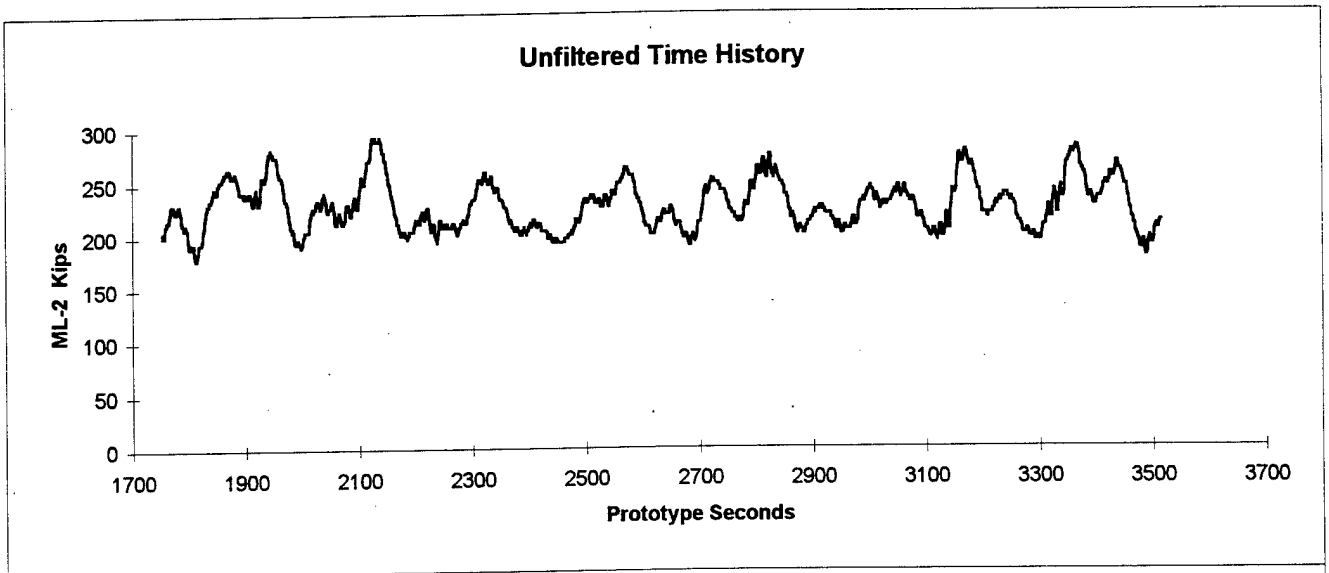

Unfiltered Time History
Heave Feet
12
10
8
6
4
2
0
-2
-4
-6
-8
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
10
8
6
4
2
0
-2
-4
-6
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered High Pass Time History
Heave Feet
4
3
2
1
0
-1
-2
-3
-4
1700
3700
Prototype Seconds

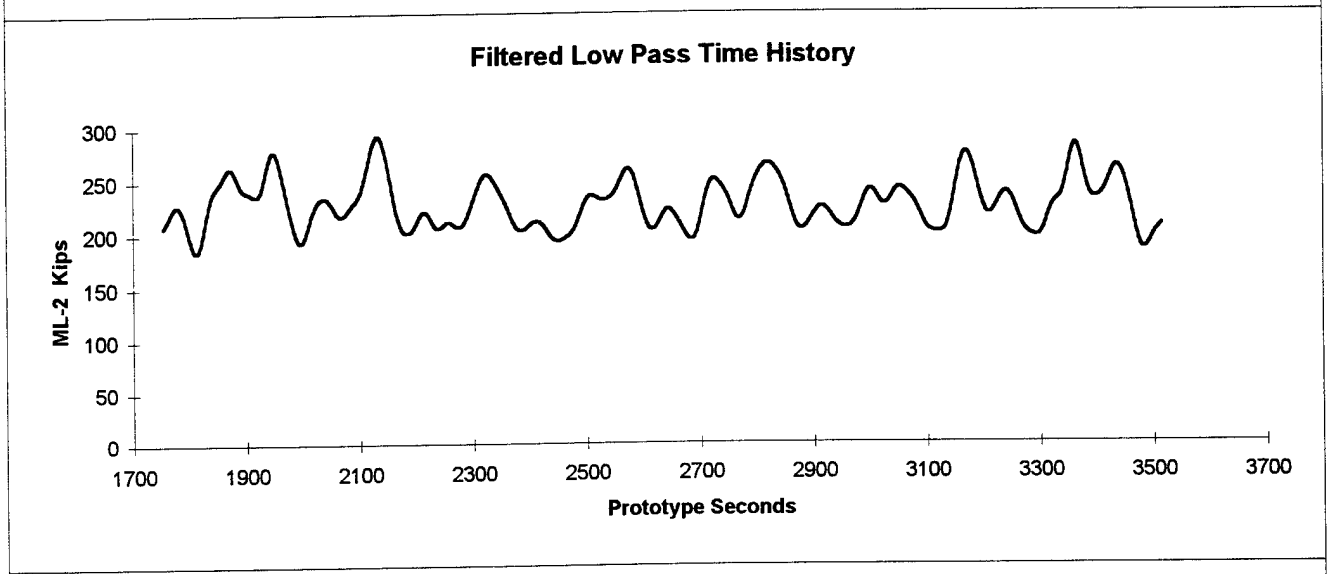

Unfiltered Time History
Surge Feet
10
5
0
-5
-10
-15
-20
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
10
5
0
-5
-10
-15
-20
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered High Pass Time History
Surge Feet
4
3
2
1
0
-1
-2
-3
-4
-5
-6
1700
3700
Prototype Seconds

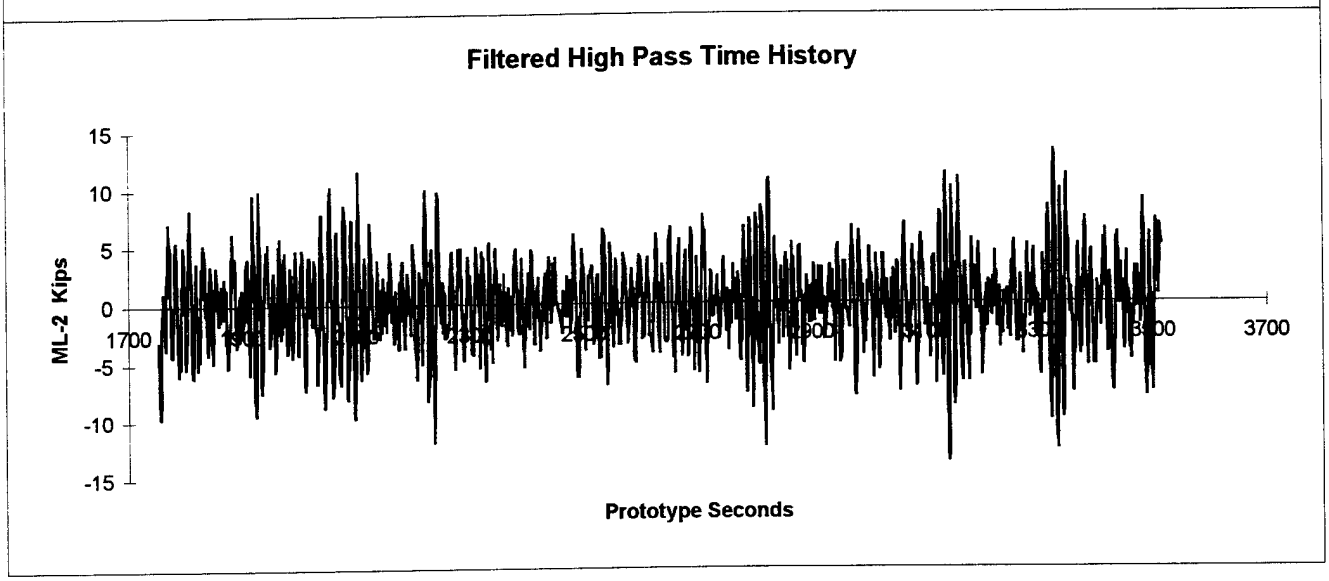

Unfiltered Time History
ML-1 Kips
500
450
400
350
300
250
200
150
100
50
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds

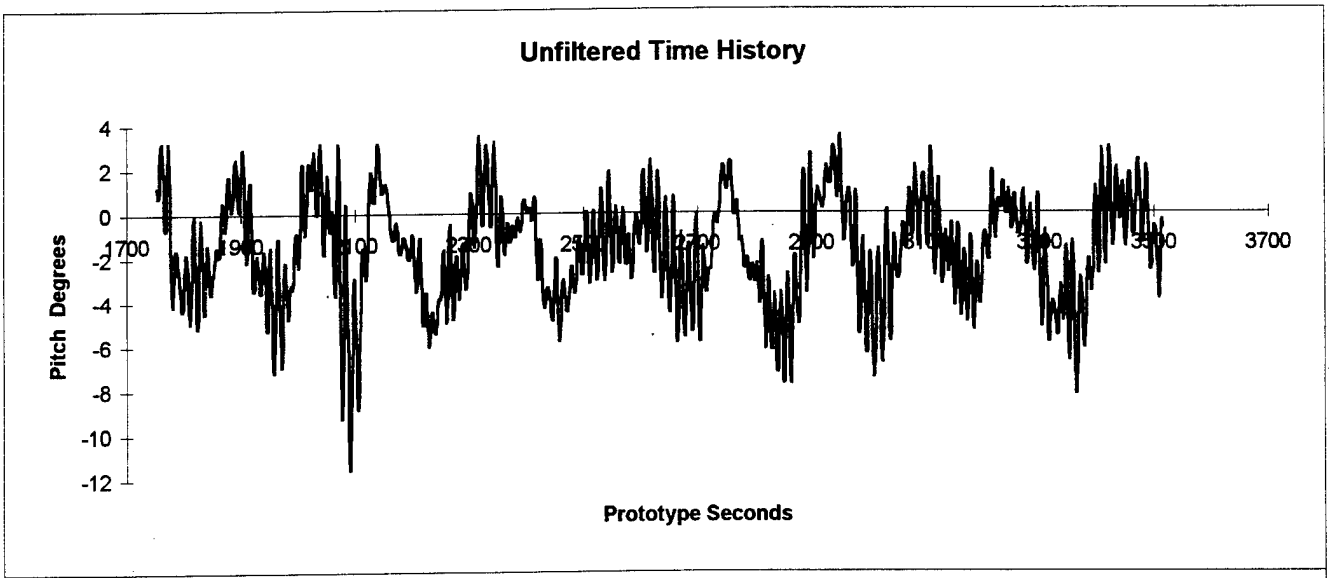

Filtered Low Pass Time History
ML-1 Kips
500
450
400
350
300
250
200
150
100
50
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds

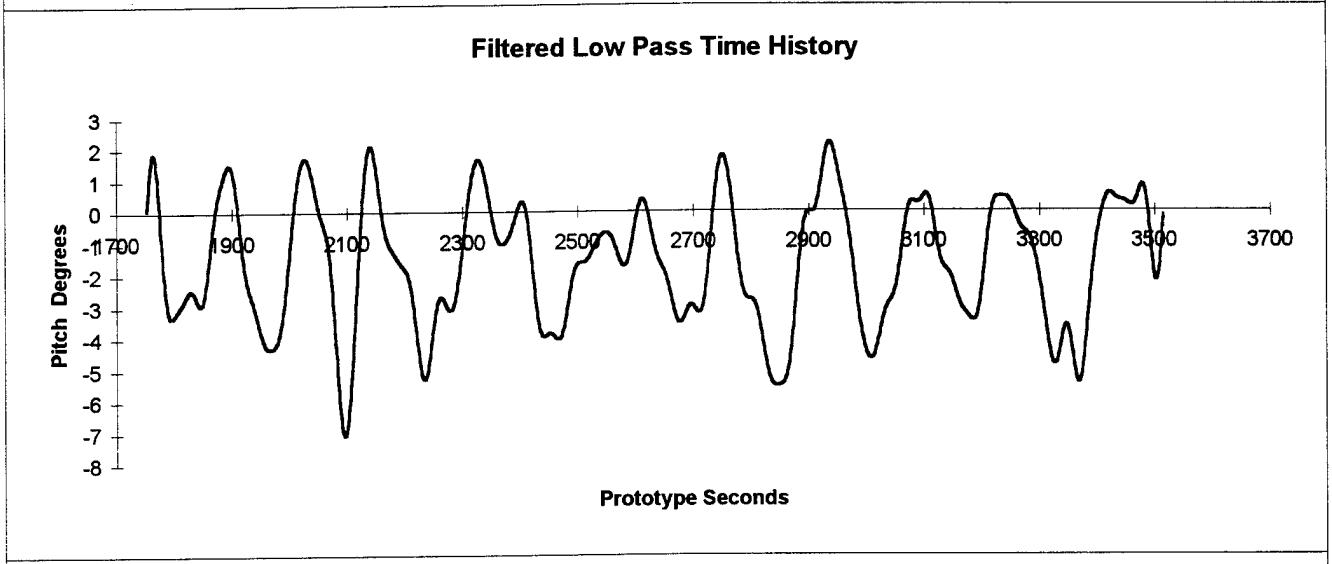

Filtered High Pass Time History
ML-1 Kips
25
20
15
10
5
0
-5
-10
-15
-20
-25
-30
3700
Prototype Seconds

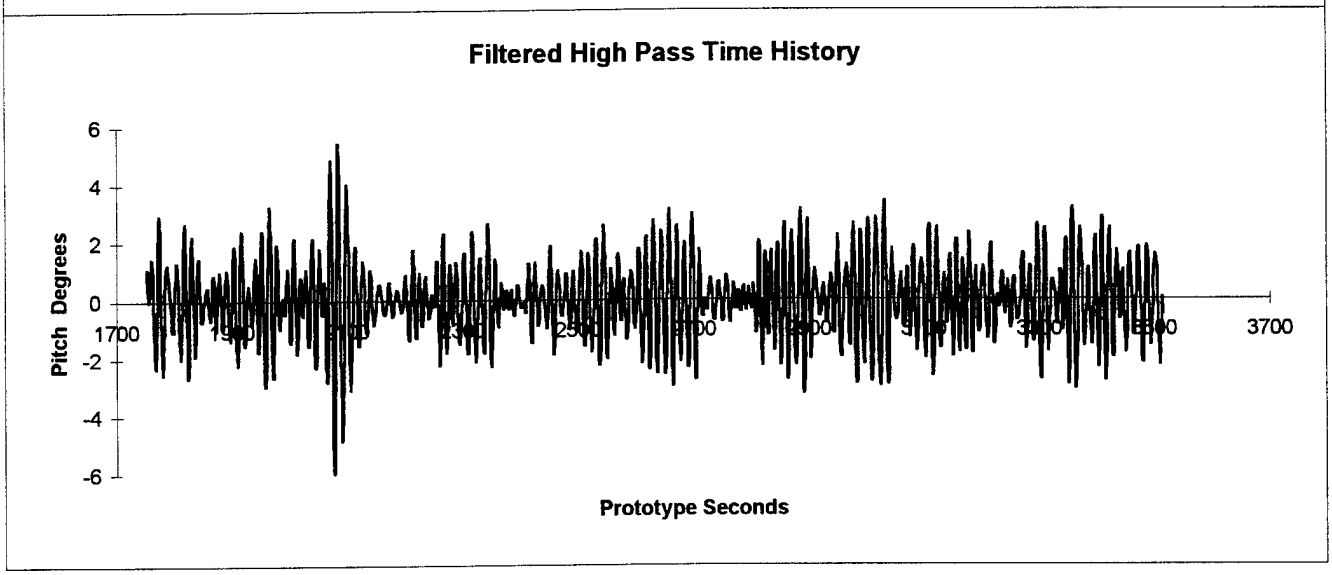

Unfiltered Time History
ML-2 Kips
300
250
200
150
100
50
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds

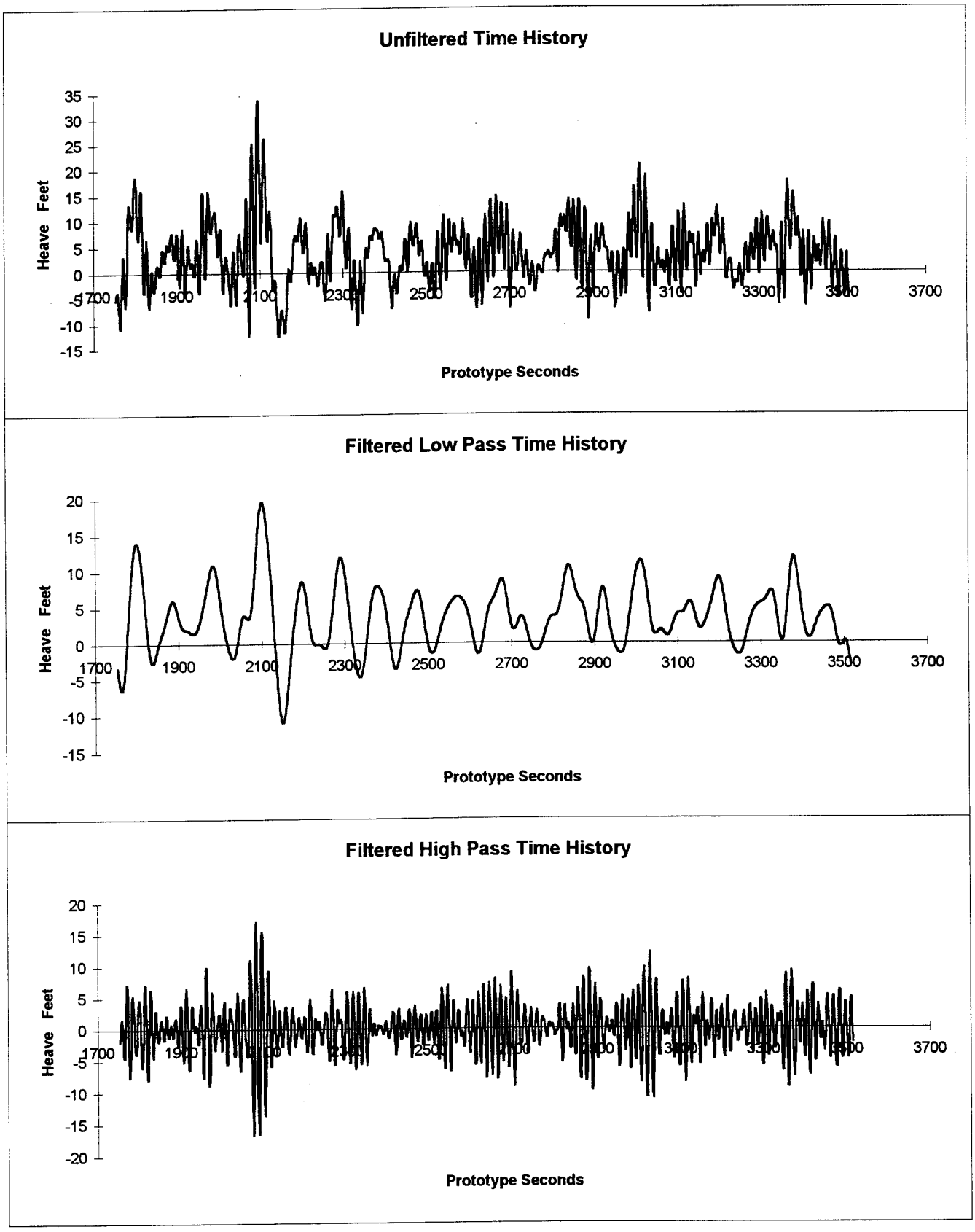

Filtered Low Pass Time History
ML-2 Kips
300
250
200
150
100
50
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds

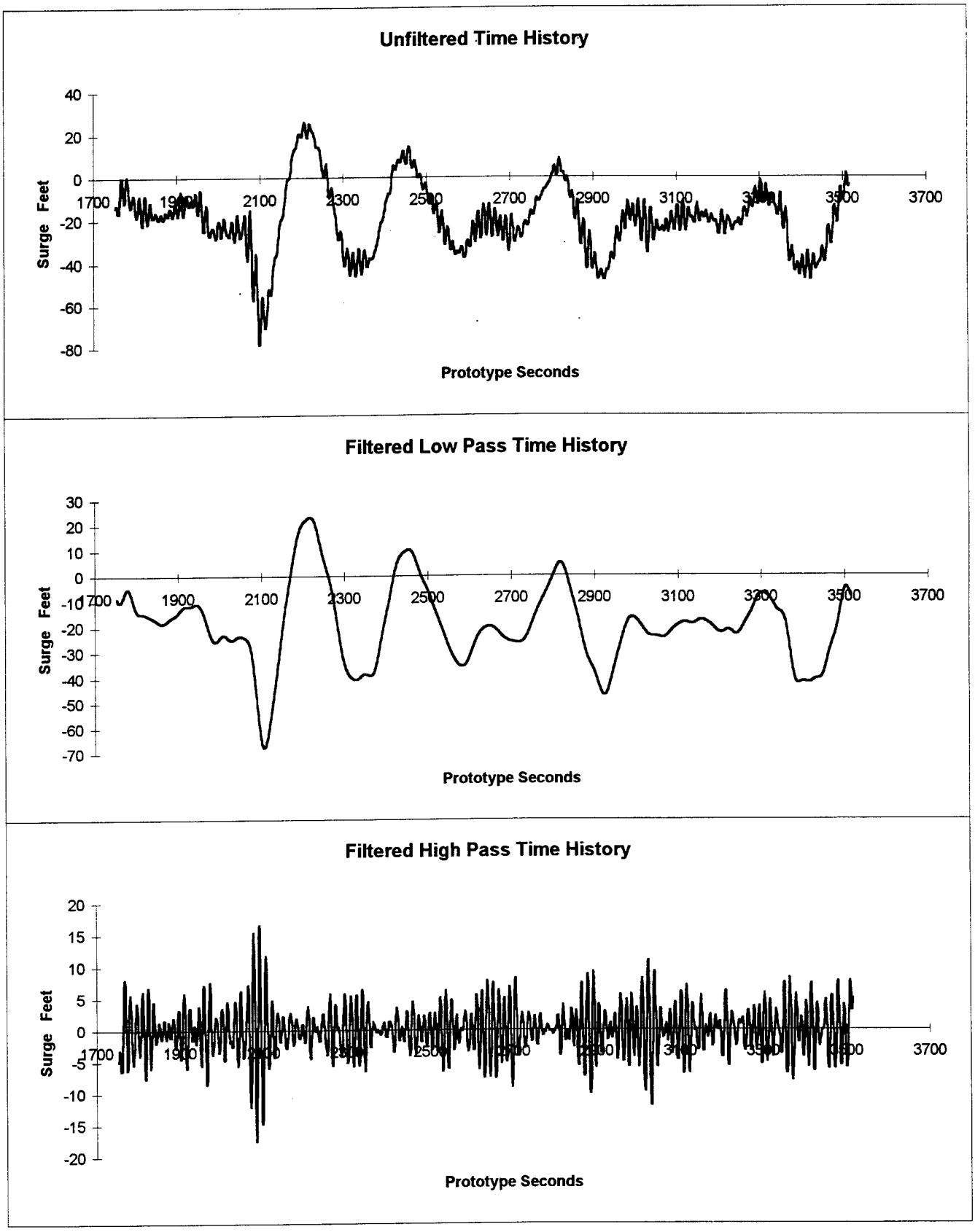

Filtered High Pass Time History
ML-2 Kips
15
10
5
0
-5
-10
-15
1700
3700
Prototype Seconds

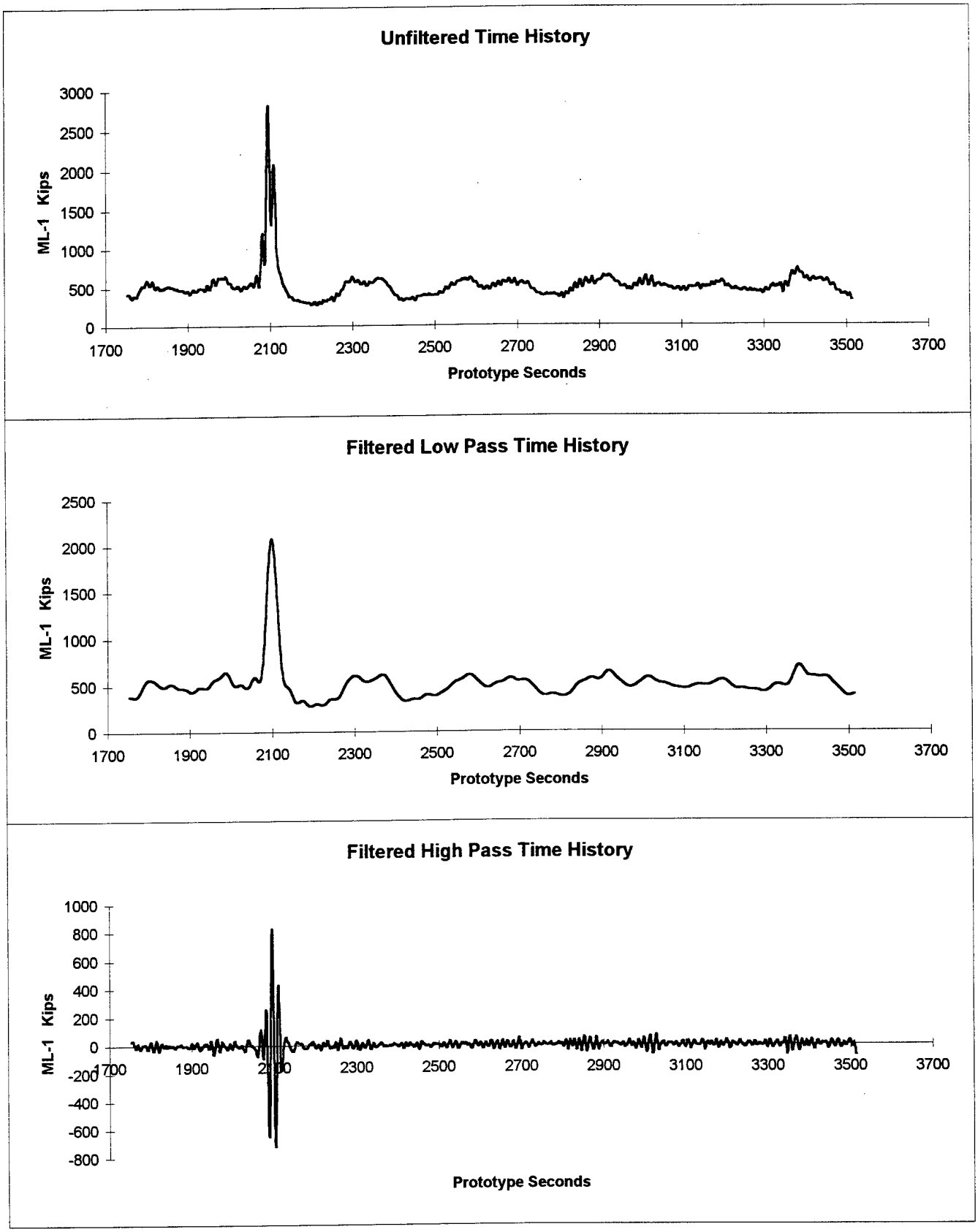

Unfiltered Time History
Pitch Degrees
4
2
0
-2
-4
-6
-8
-10
-12
1700
3700
Prototype Seconds

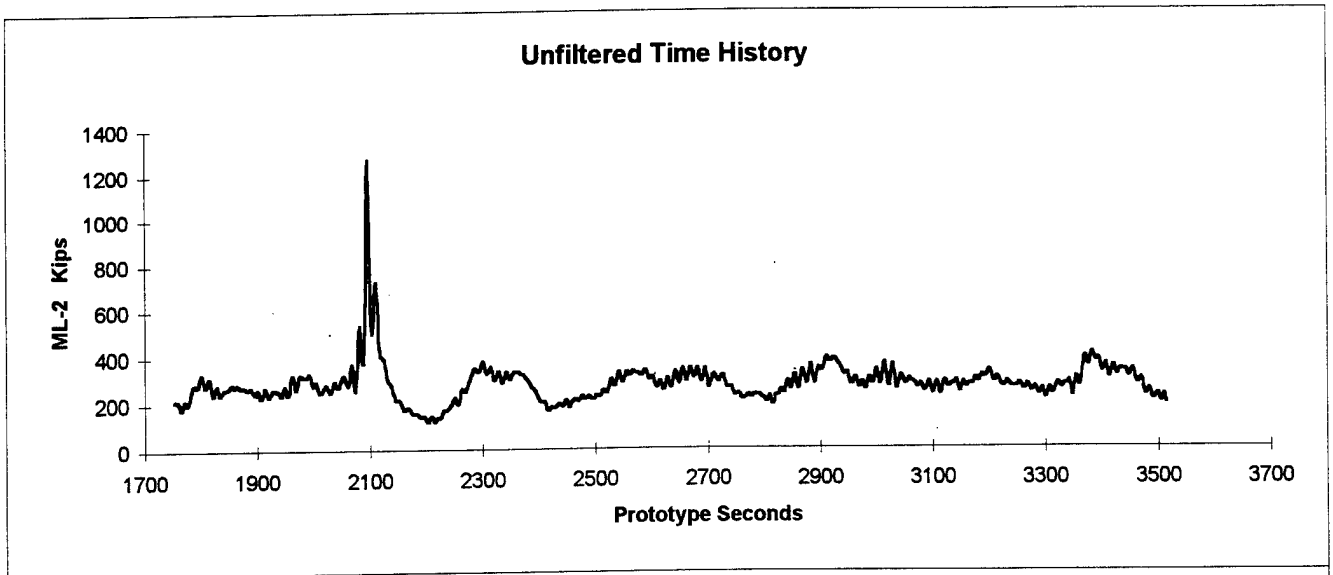

Filtered Low Pass Time History
Pitch Degrees
3
2
1
0
-1
-2
-3
-4
-5
-6
-7
-8
1700
1900
2100
2300
2500
2700
2900
3100
3500
3700
Prototype Seconds

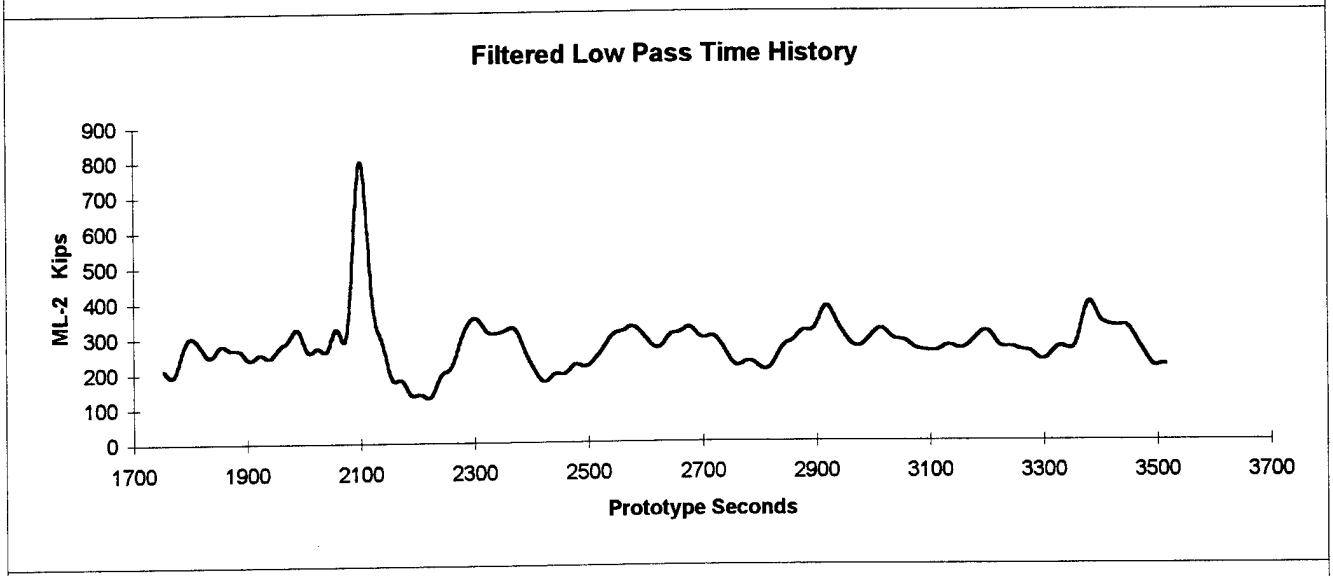

Filtered High Pass Time History
Pitch Degrees
6
4
2
0
-2
-4
-6
1700
3700
Prototype Seconds

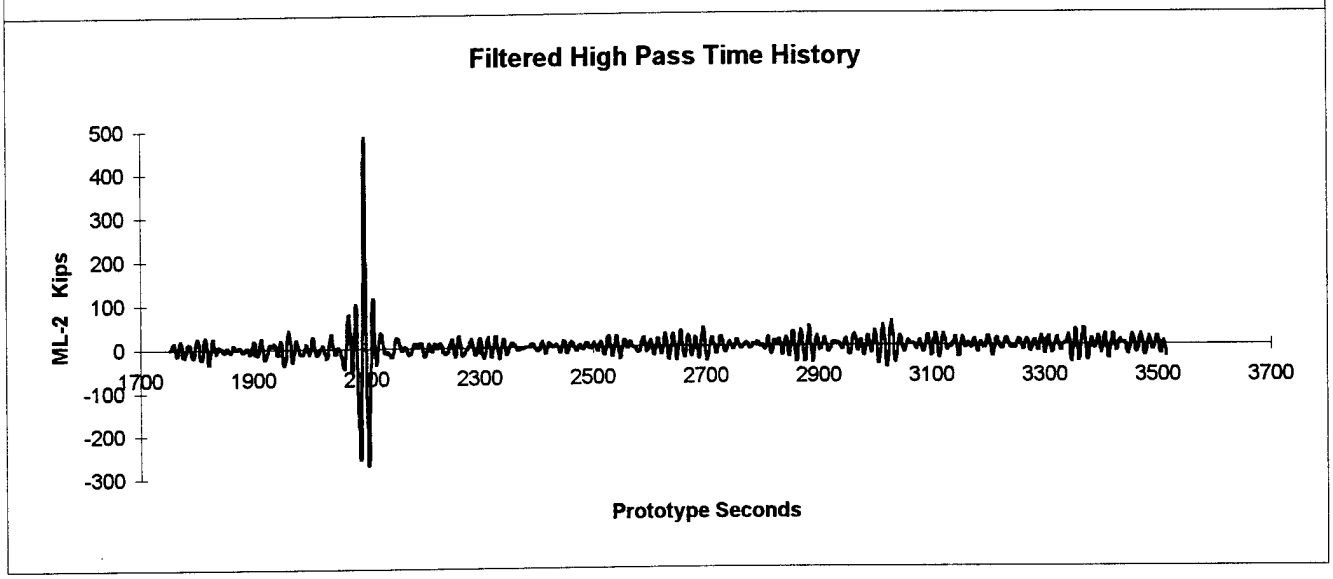

Unfiltered Time History
Heave Feet
35
30
25
20
15
10
5
0
-5
-10
-15
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered Low Pass Time History
Heave Feet
20
15
10
5
0
-5
-10
-15
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered High Pass Time History
Heave Feet
20
15
10
5
0
-5
-10
-15
-20
1700
3700
Prototype Seconds


Unfiltered Time History
Surge Feet
40
20
0
-20
-40
-60
-80
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered Low Pass Time History
Surge Feet
30
20
10
0
-10
-20
-30
-40
-50
-60
-70
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered High Pass Time History
Surge Feet
20
15
10
5
0
-5
-10
-15
-20
1700
1900
3700
Prototype Seconds

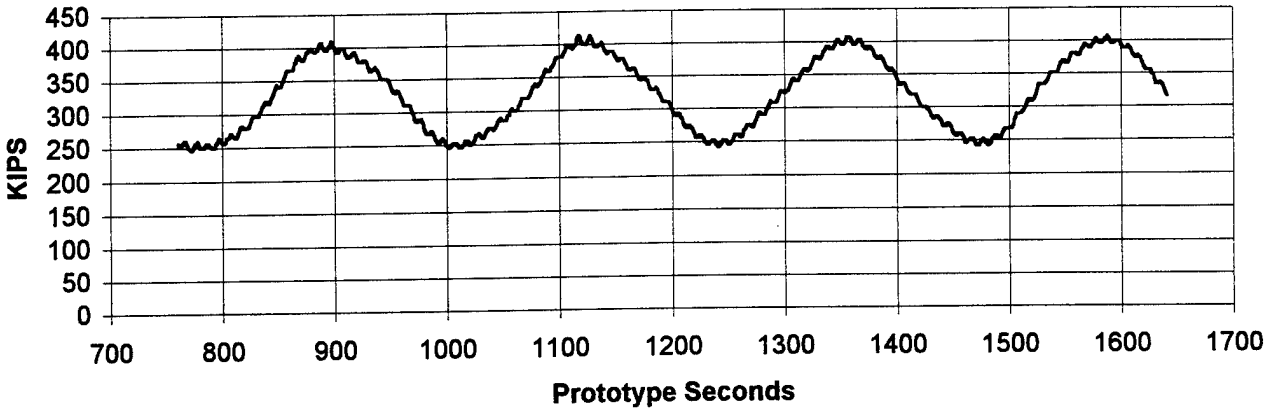

Unfiltered Time History
ML-1 Kips
3000
2500
2000
1500
1000
500
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered Low Pass Time History
ML-1 Kips
2500
2000
1500
1000
500
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds
Filtered High Pass Time History
ML-1 Kips
1000
800
600
400
200
0
-200
-400
-600
-800
1700
1900
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds


Unfiltered Time History
ML-2 Kips
1400
1200
1000
800
600
400
200
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds

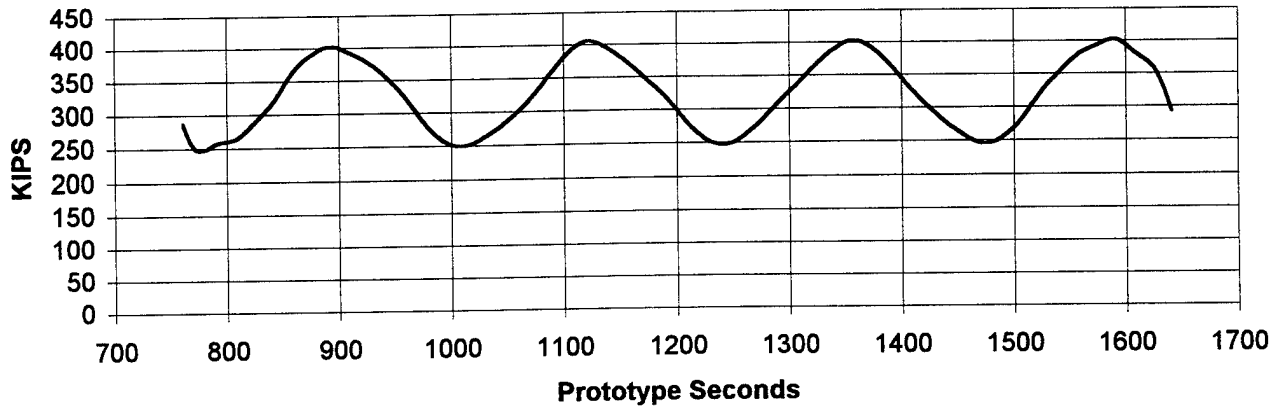

Filtered Low Pass Time History
ML-2 Kips
900
800
700
600
500
400
300
200
100
0
1700
1900
2100
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds


Filtered High Pass Time History
ML-2 Kips
500
400
300
200
100
0
-100
-200
-300
1700
1900
2300
2500
2700
2900
3100
3300
3500
3700
Prototype Seconds

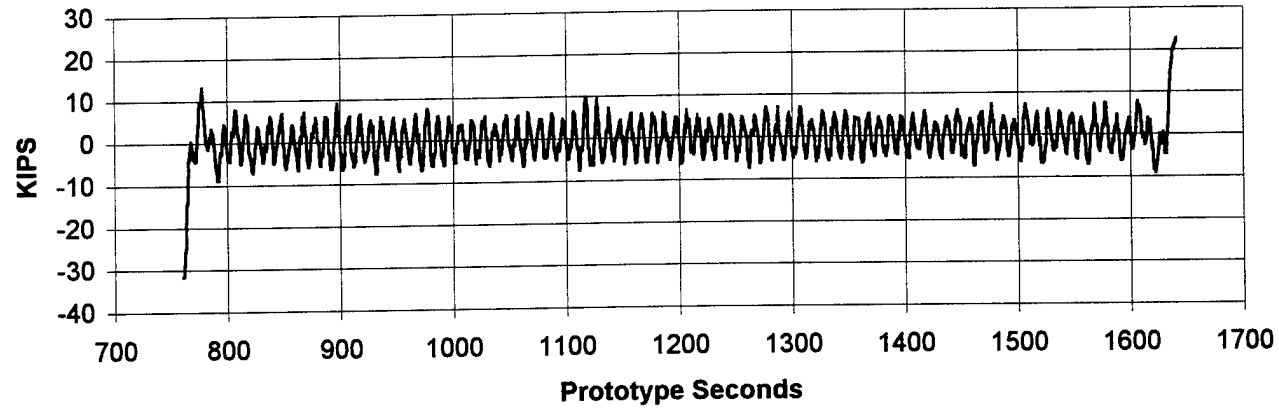
## Unfiltered Time History



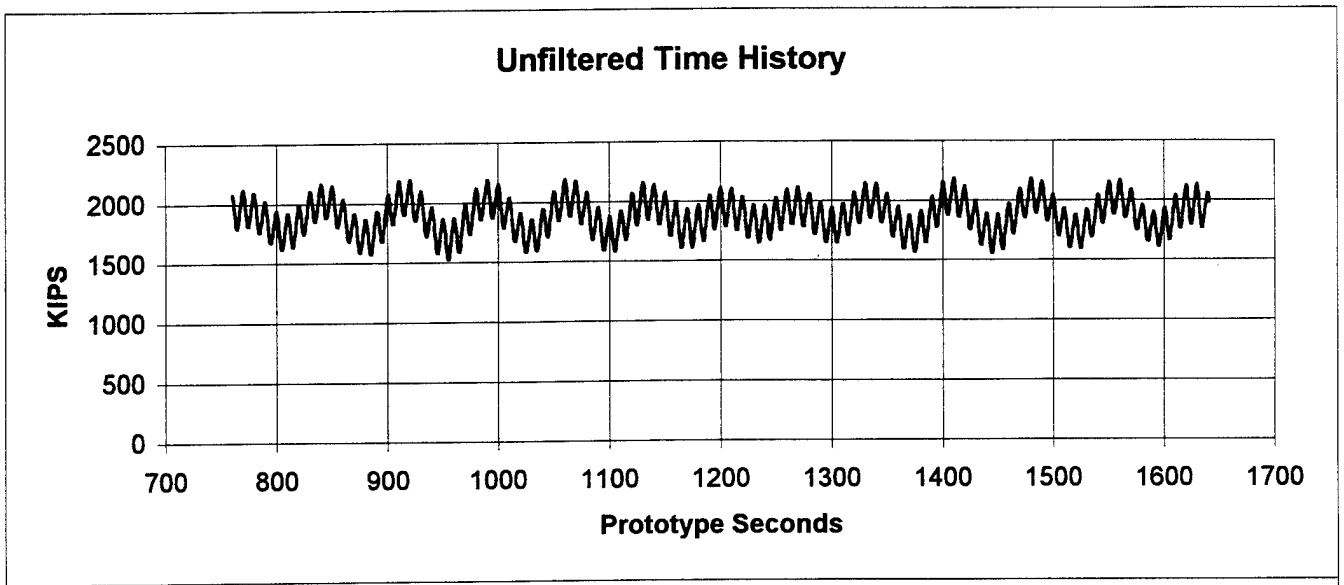

## Filtered Low Frequency Time History

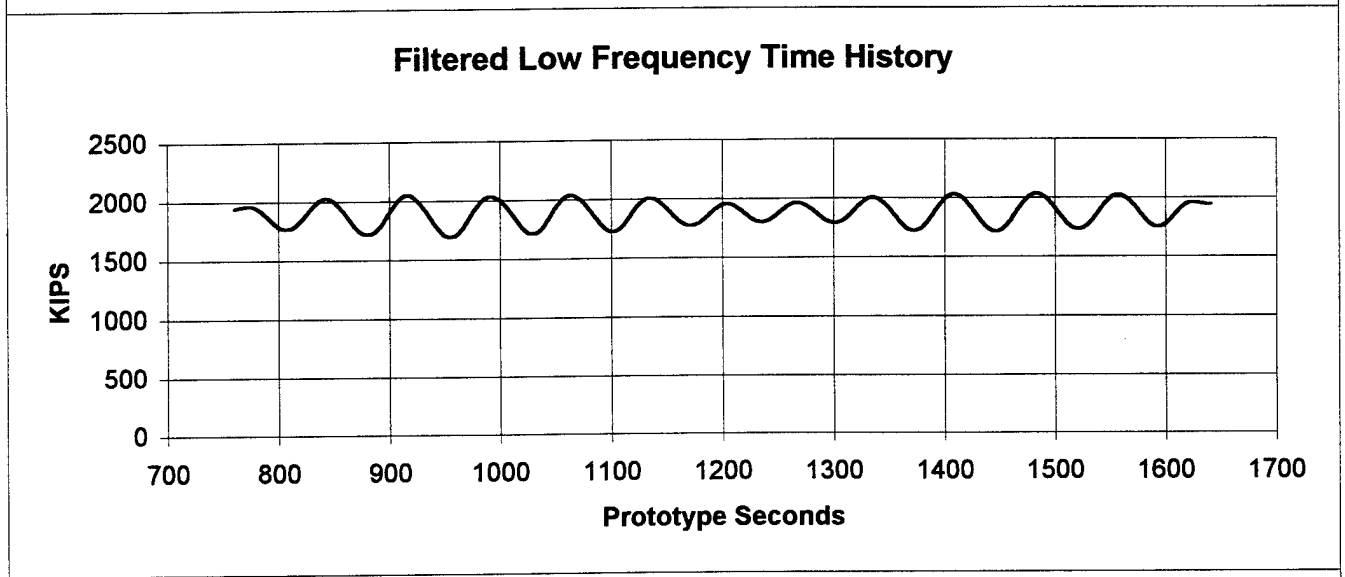


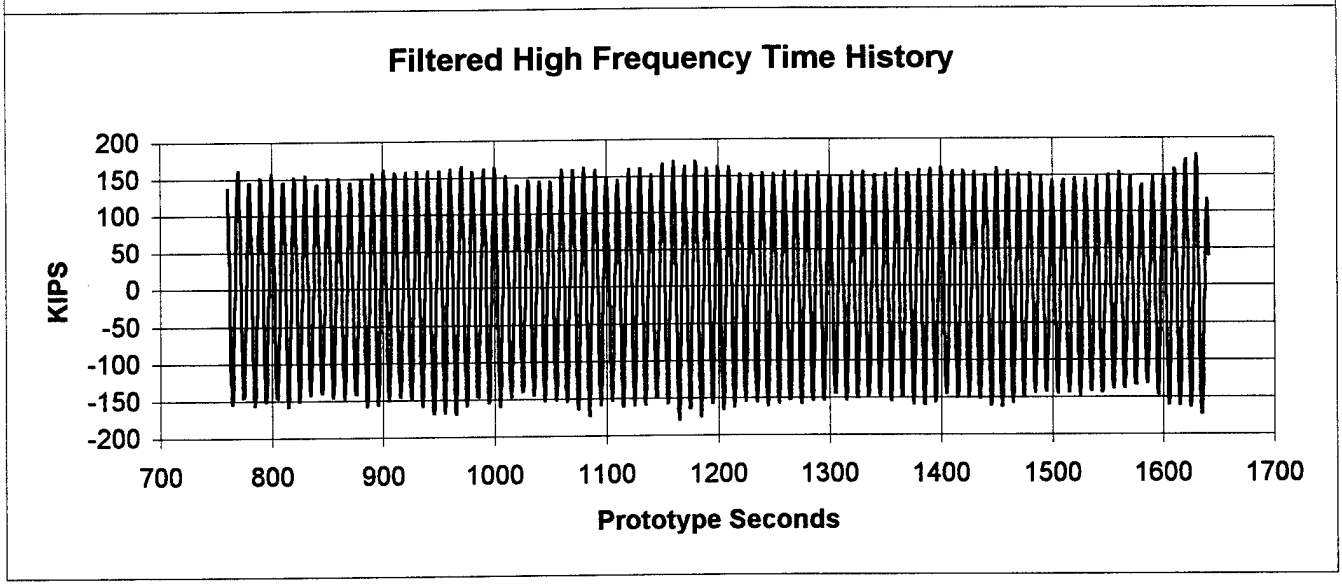

## Filtered High Frequency Time History



TEST A551 - BUOY 1 TENSION

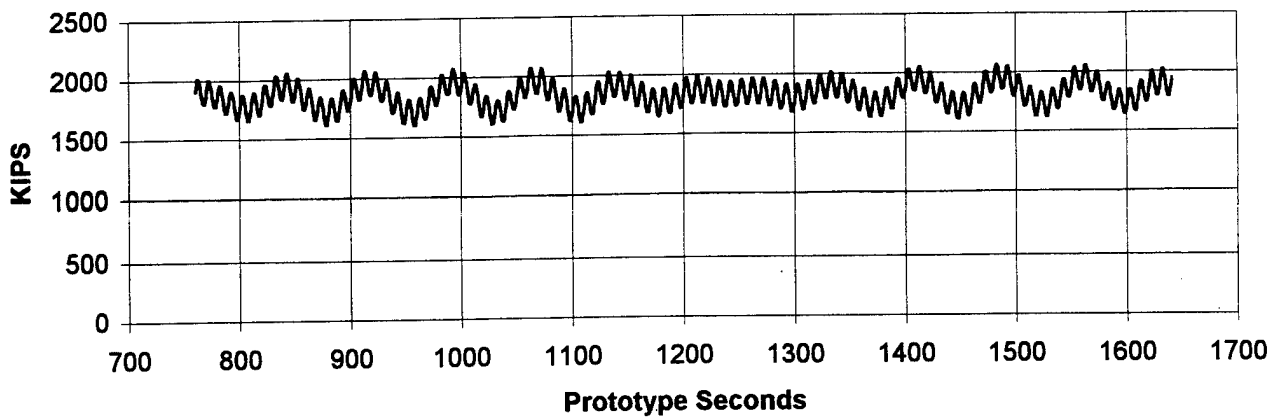


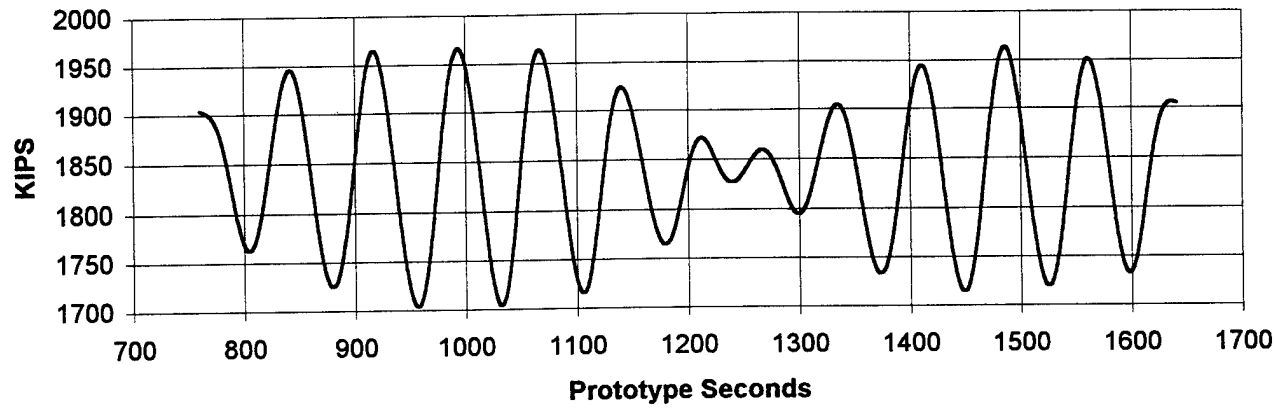



TEST A551 - BUOY 2 TENSION

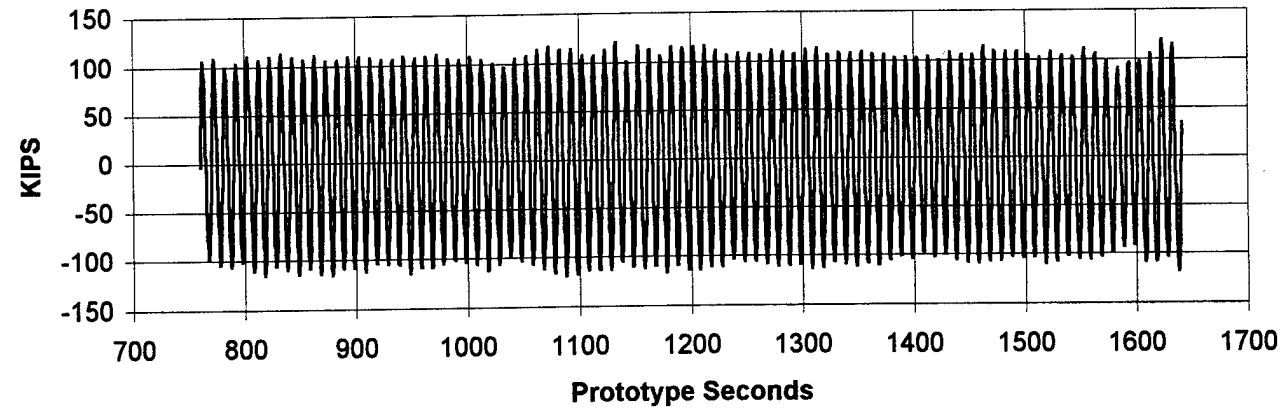
## Unfiltered Time History



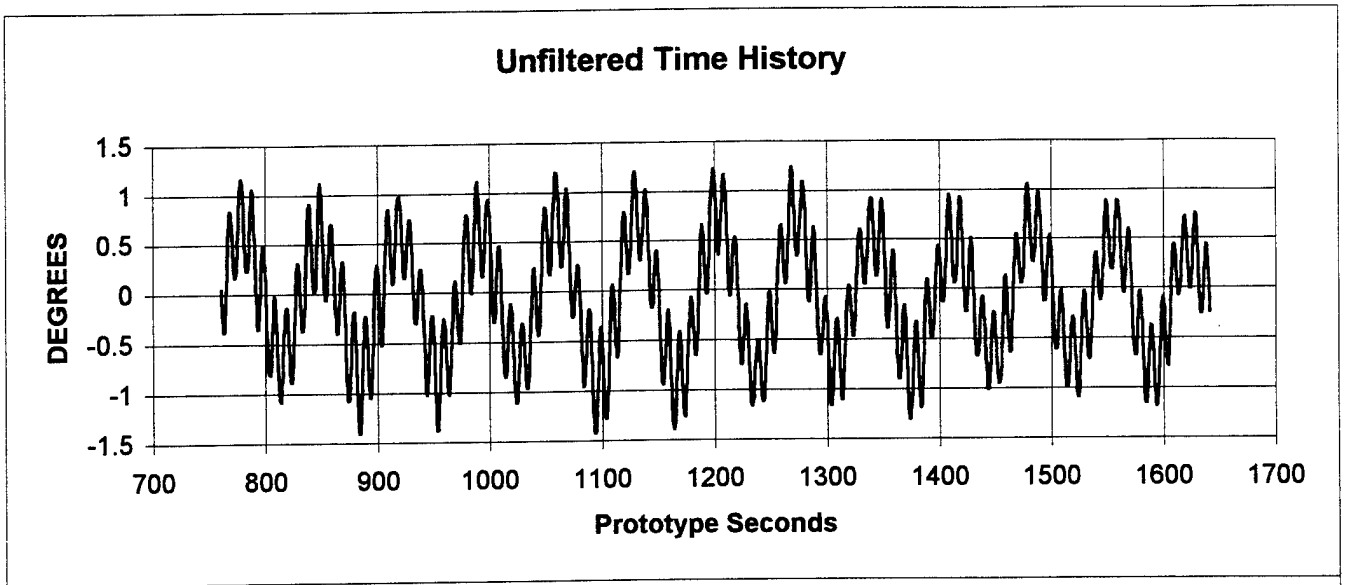

## Filtered Low Frequency Time History

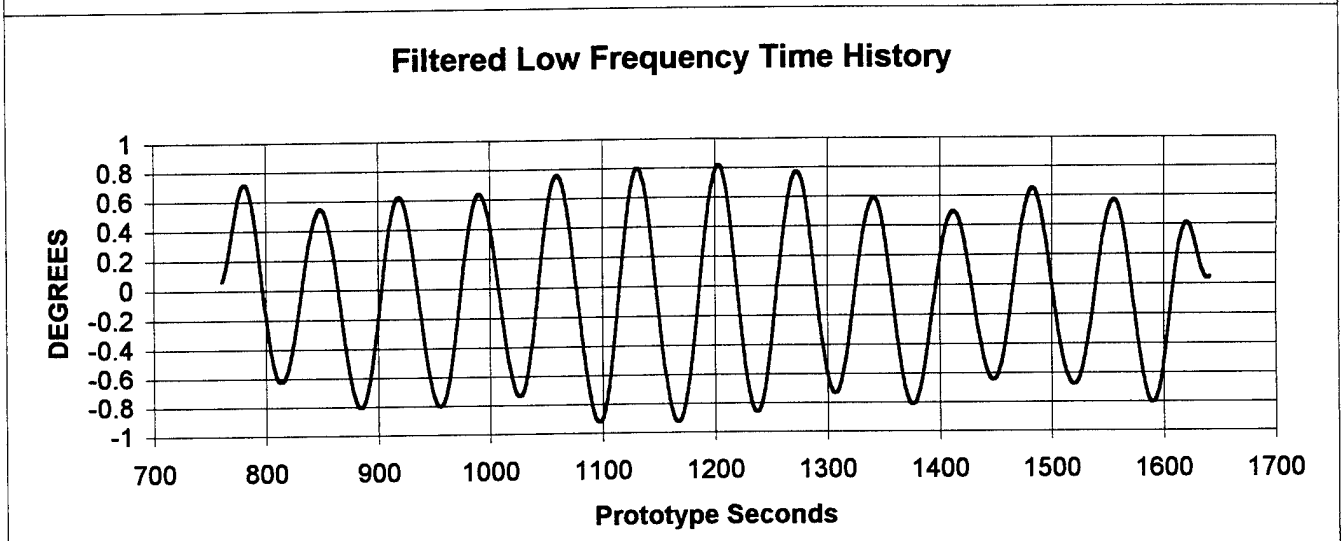


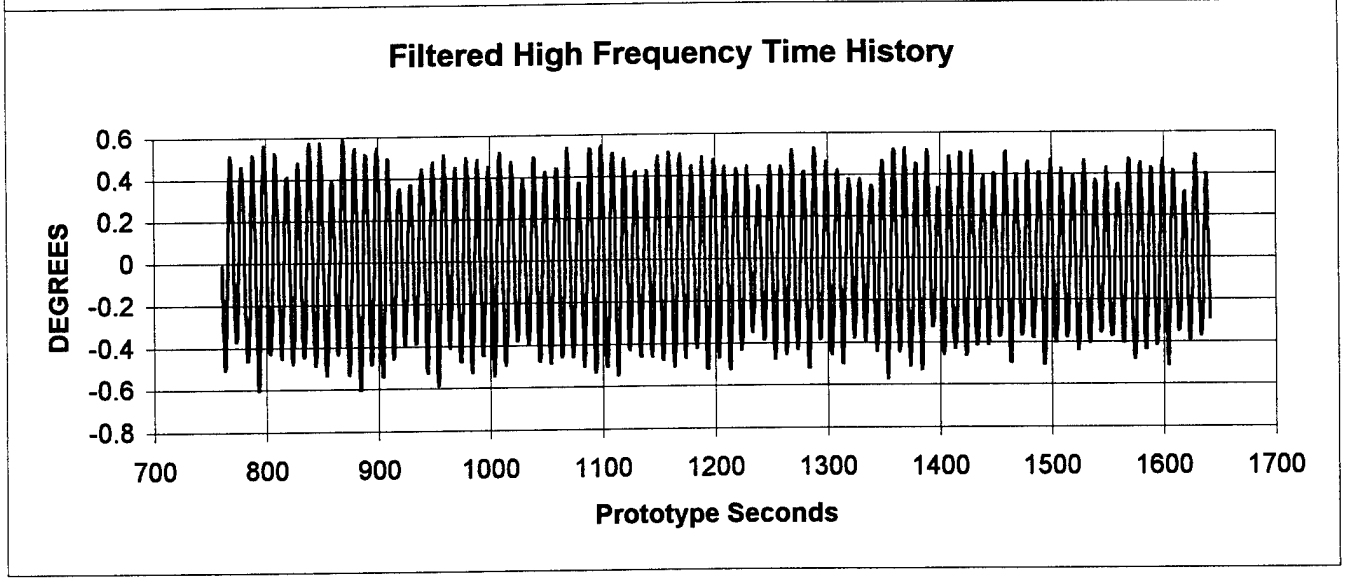

## Filtered High Frequency Time History



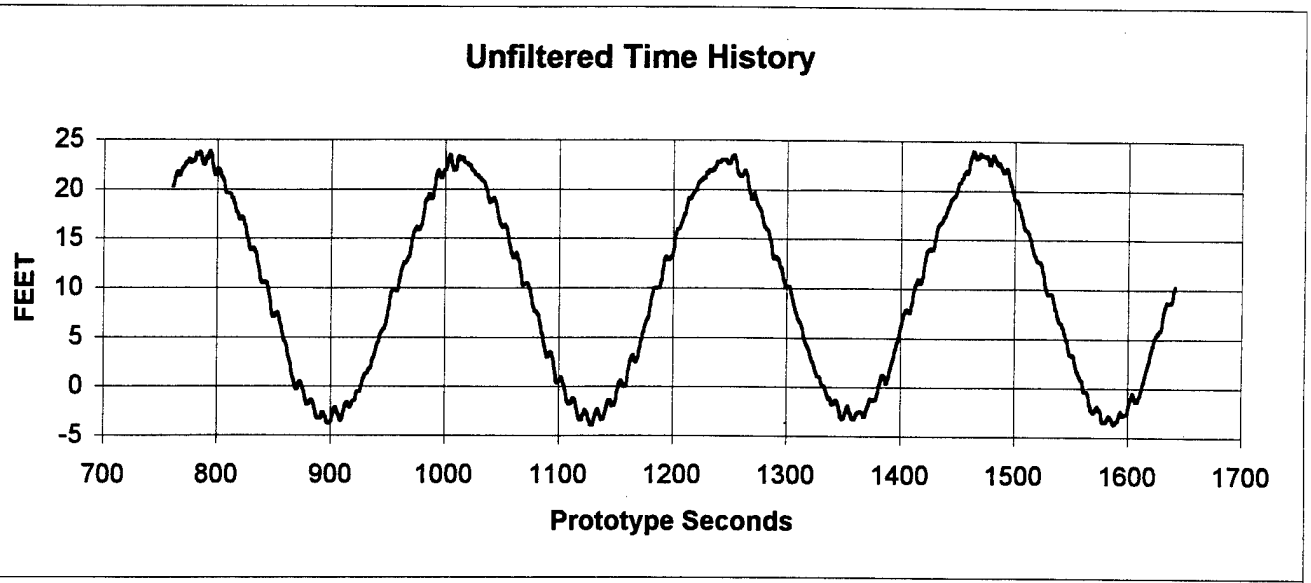
TEST A551 - PITCH

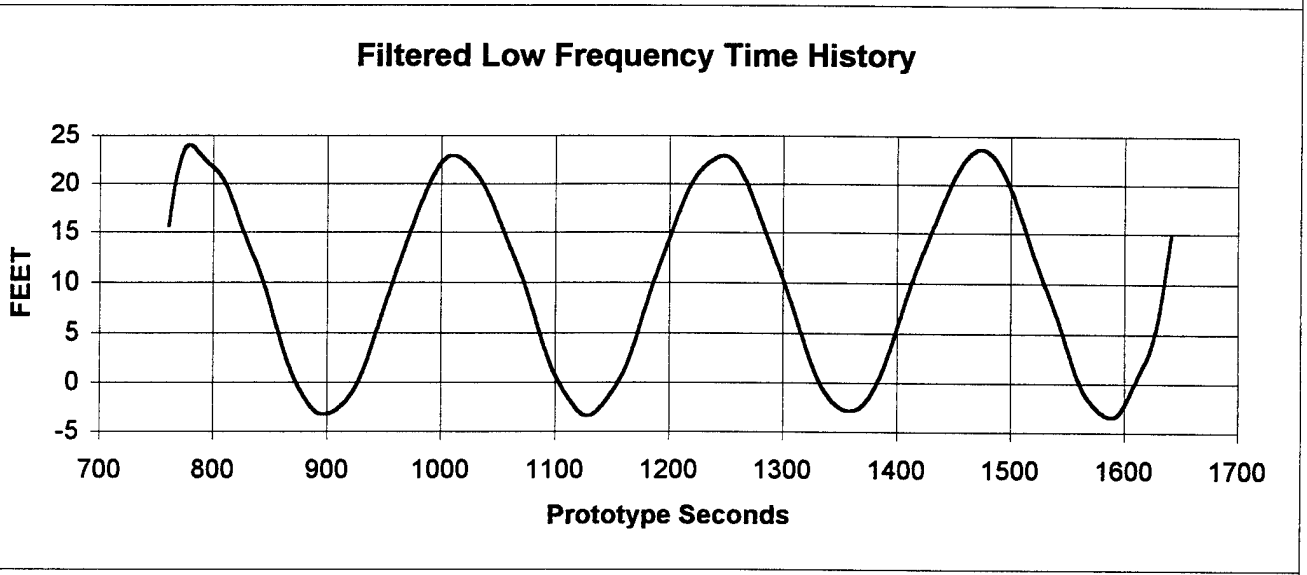


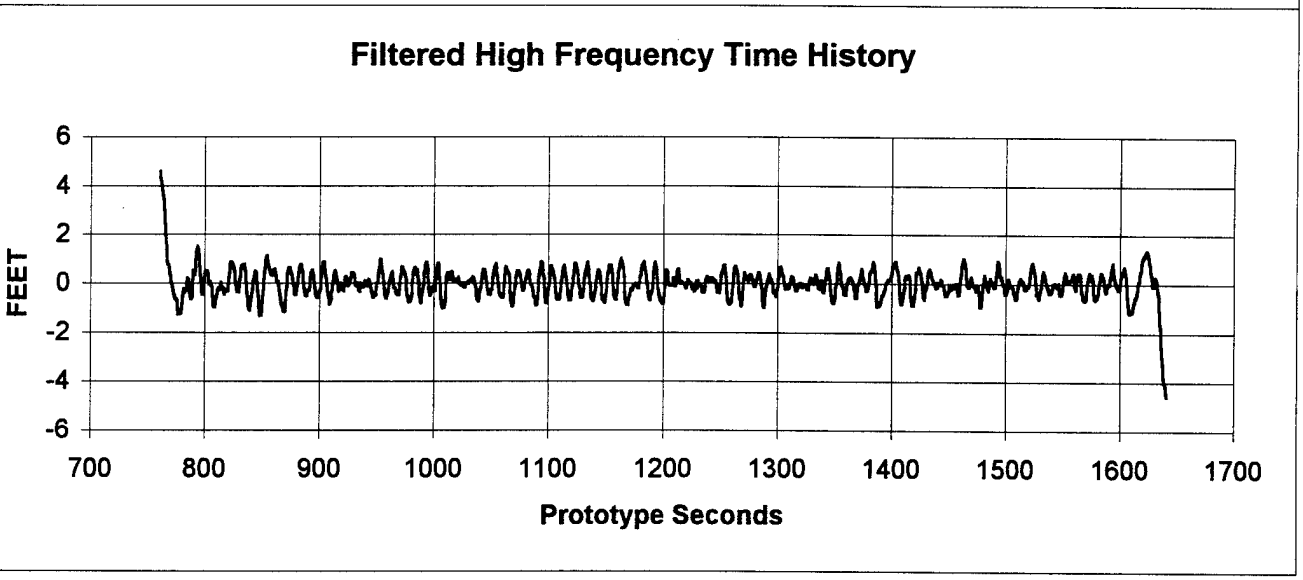



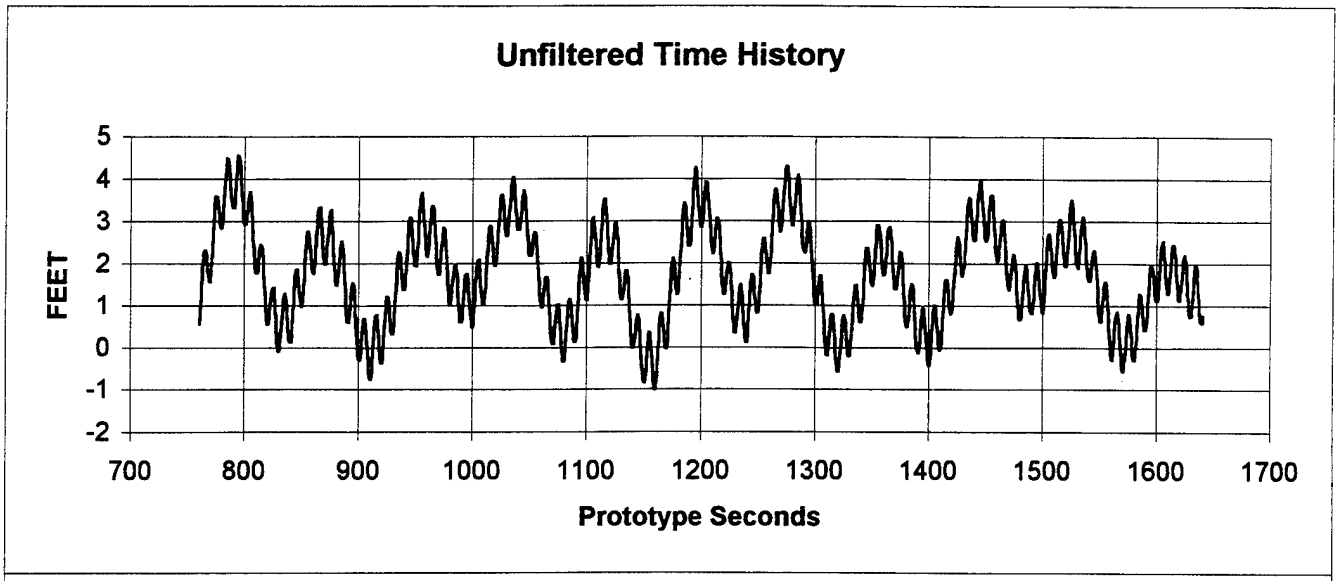
TEST A551 - PT SURGE

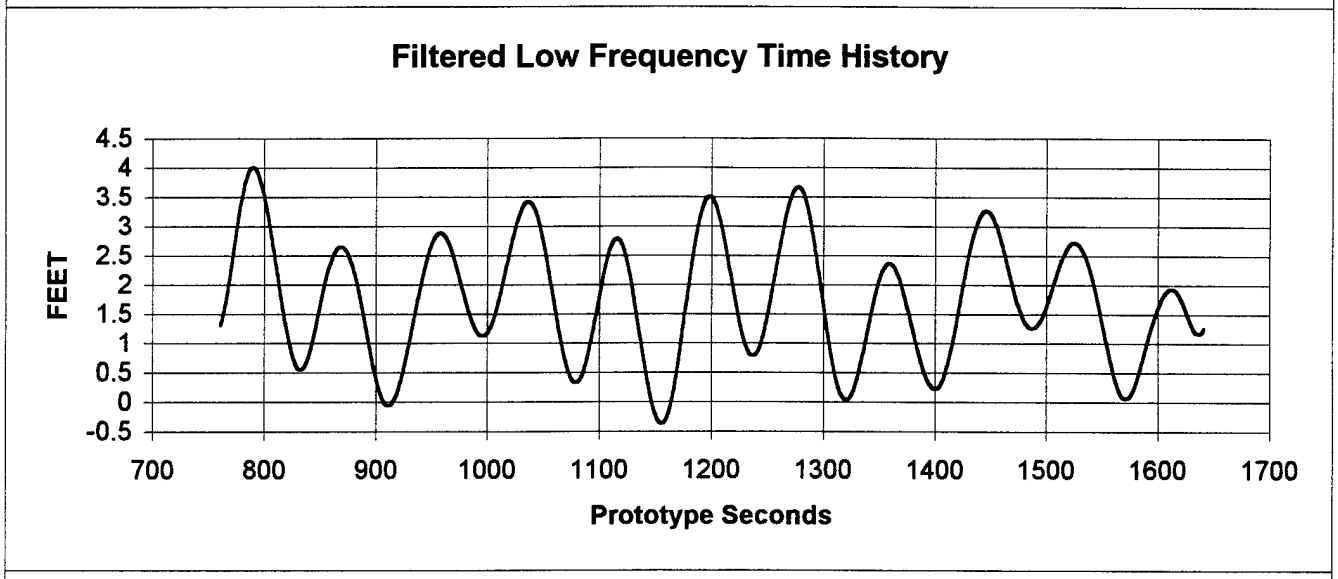


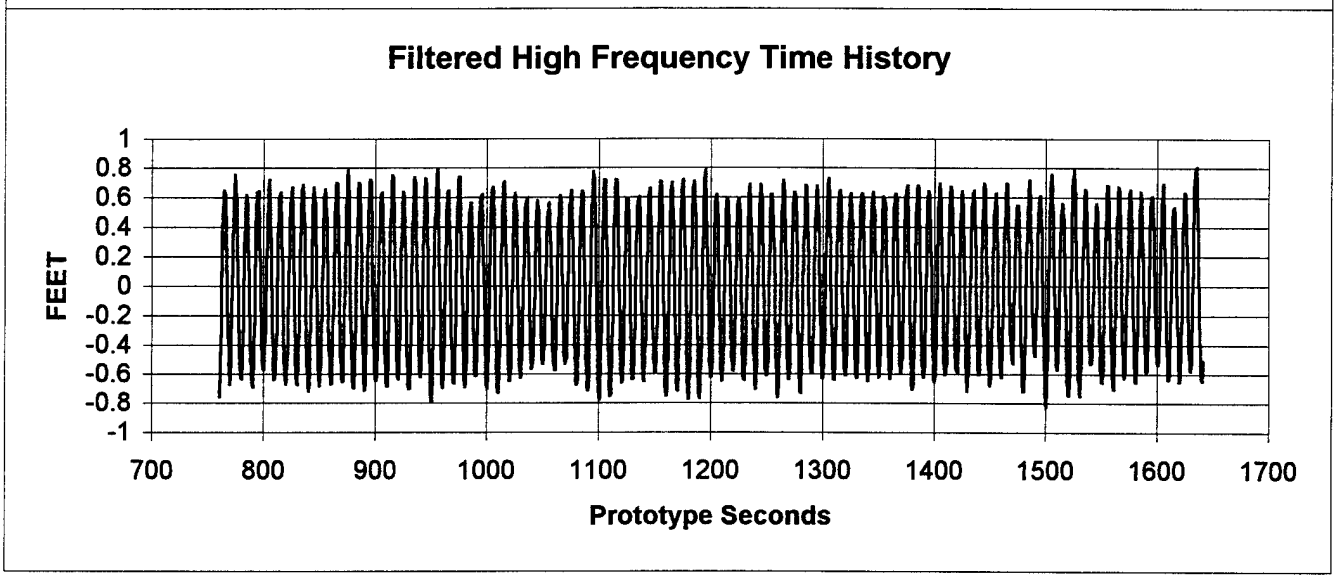



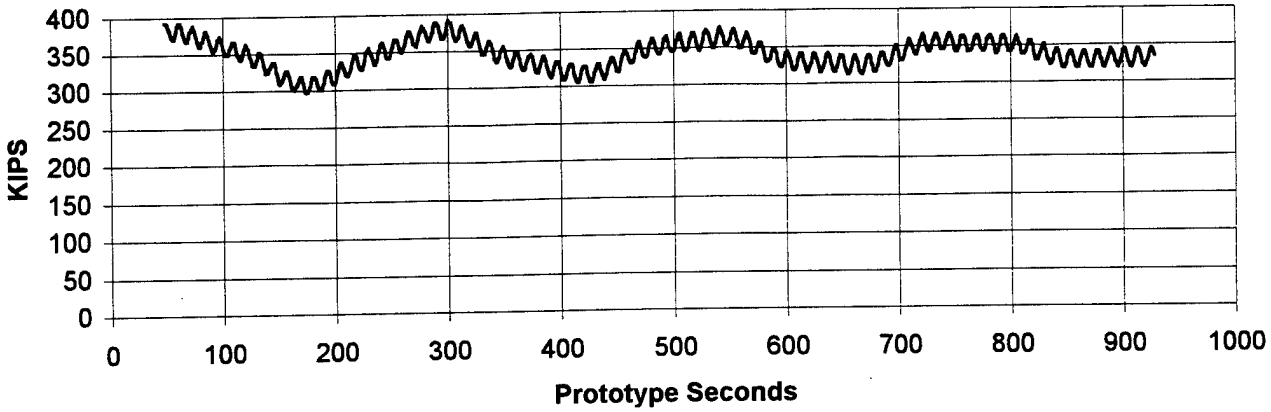
TEST A551 - PT HEAVE



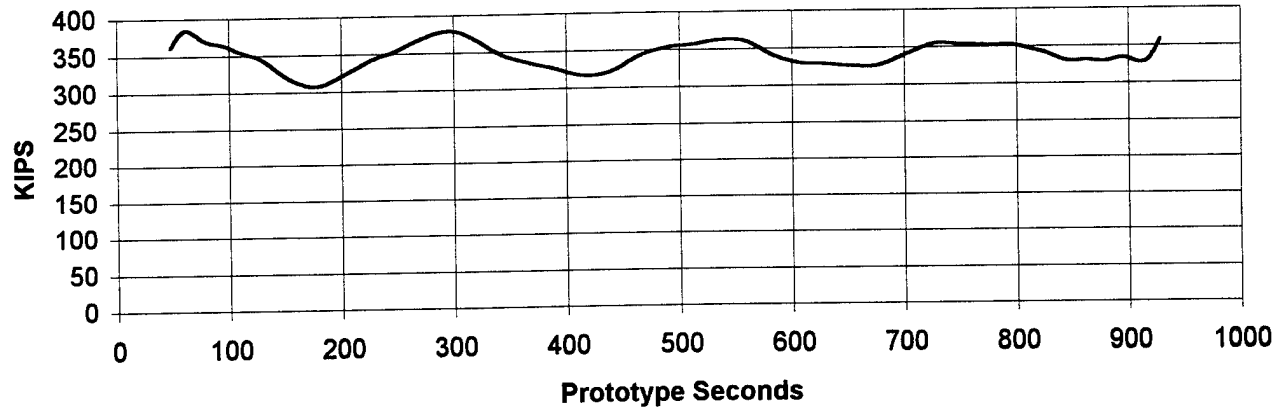



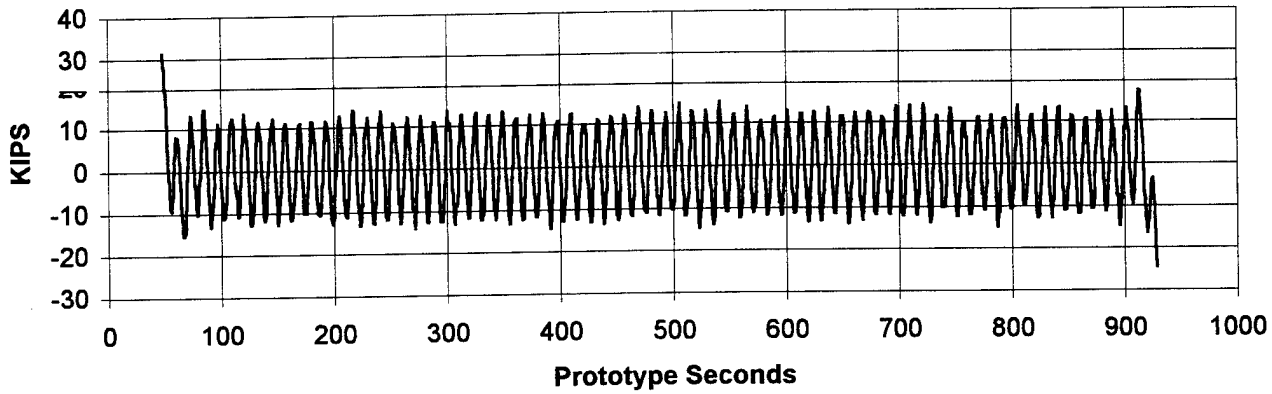
## Unfiltered Time History



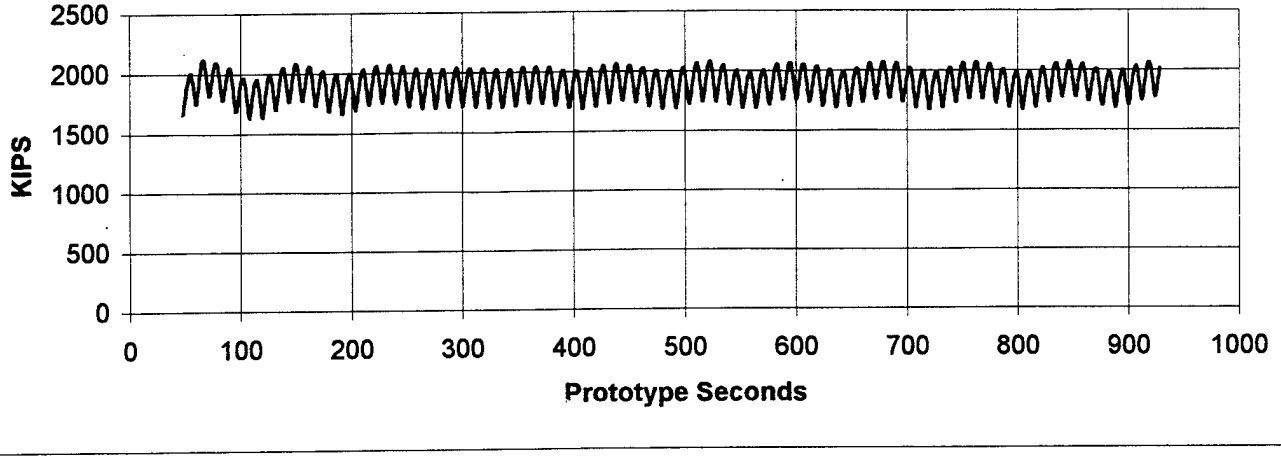

## Filtered Low Frequency Time History

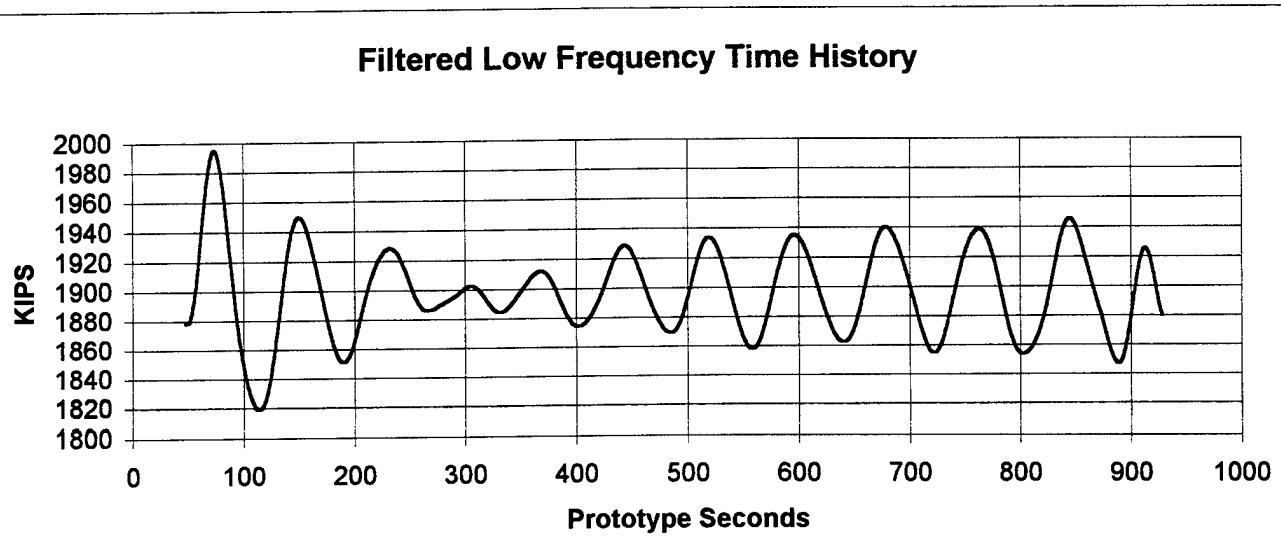


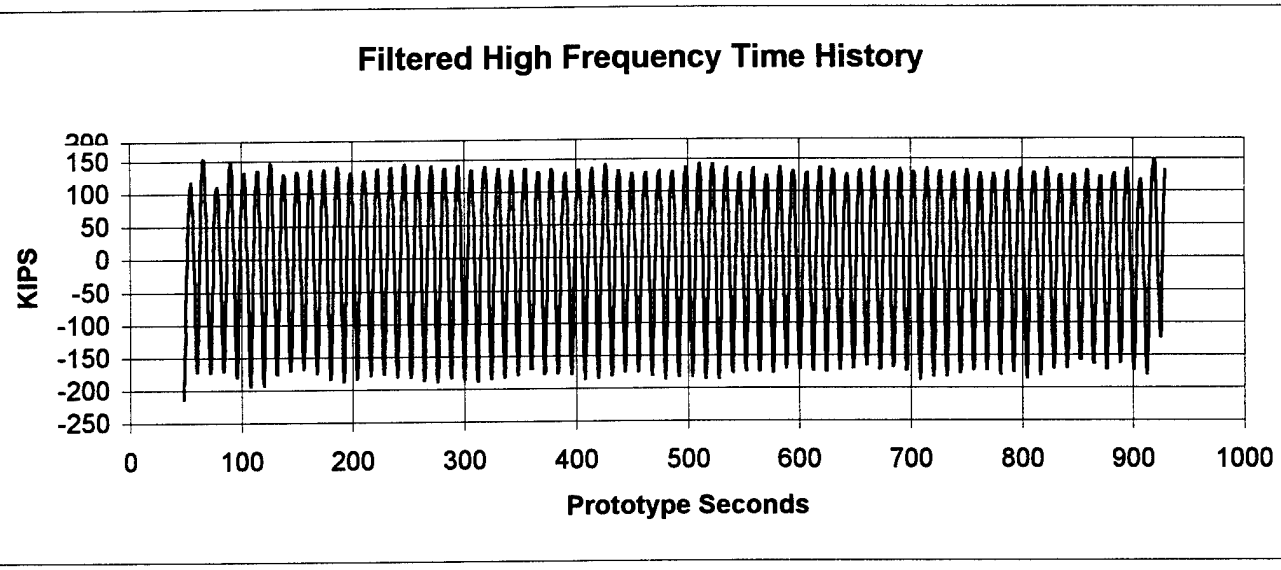

## Filtered High Frequency Time History



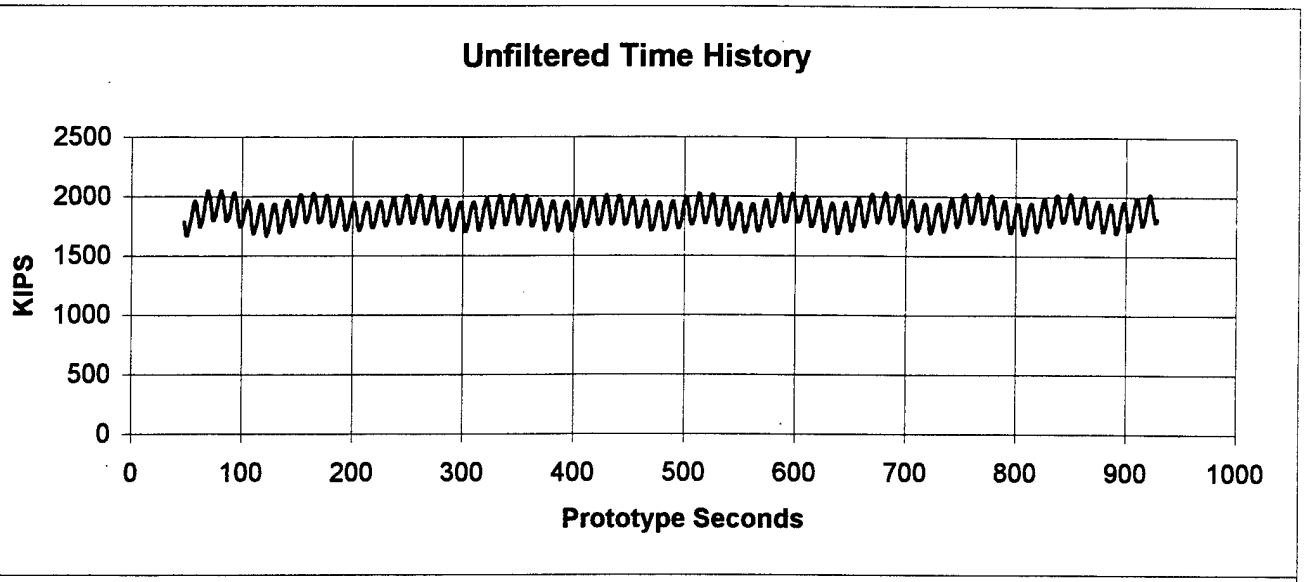
TEST A552 - BUOY 1 TENSION

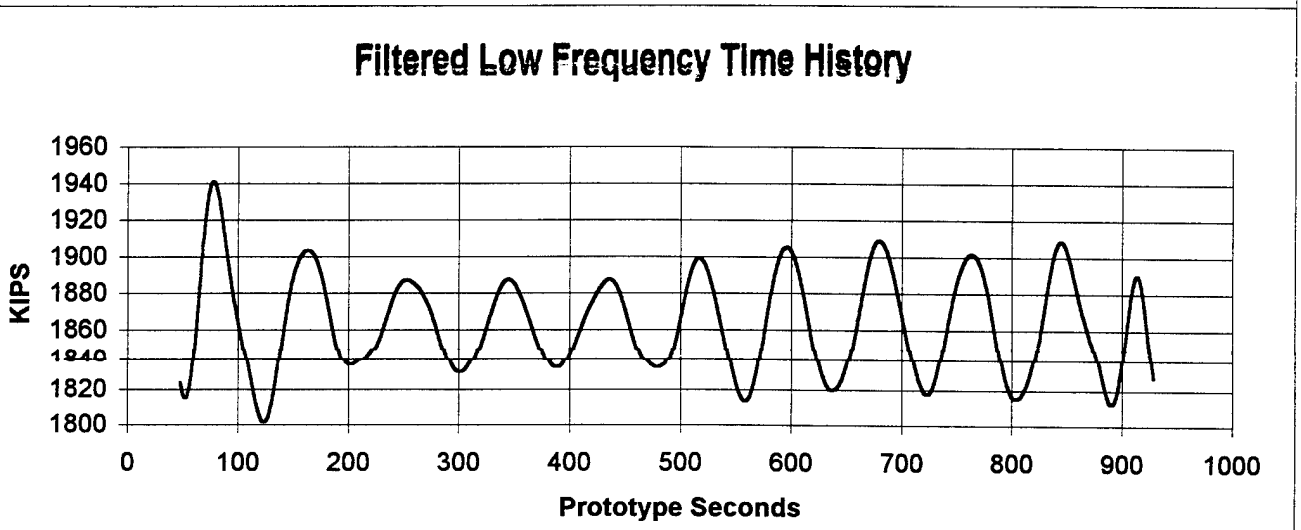


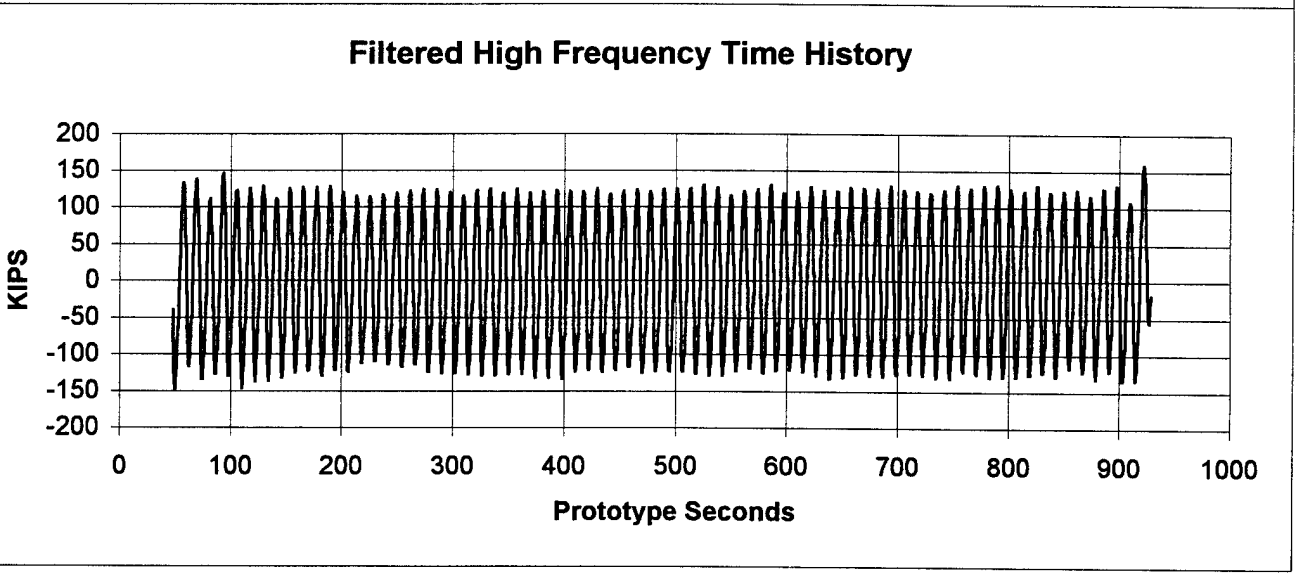



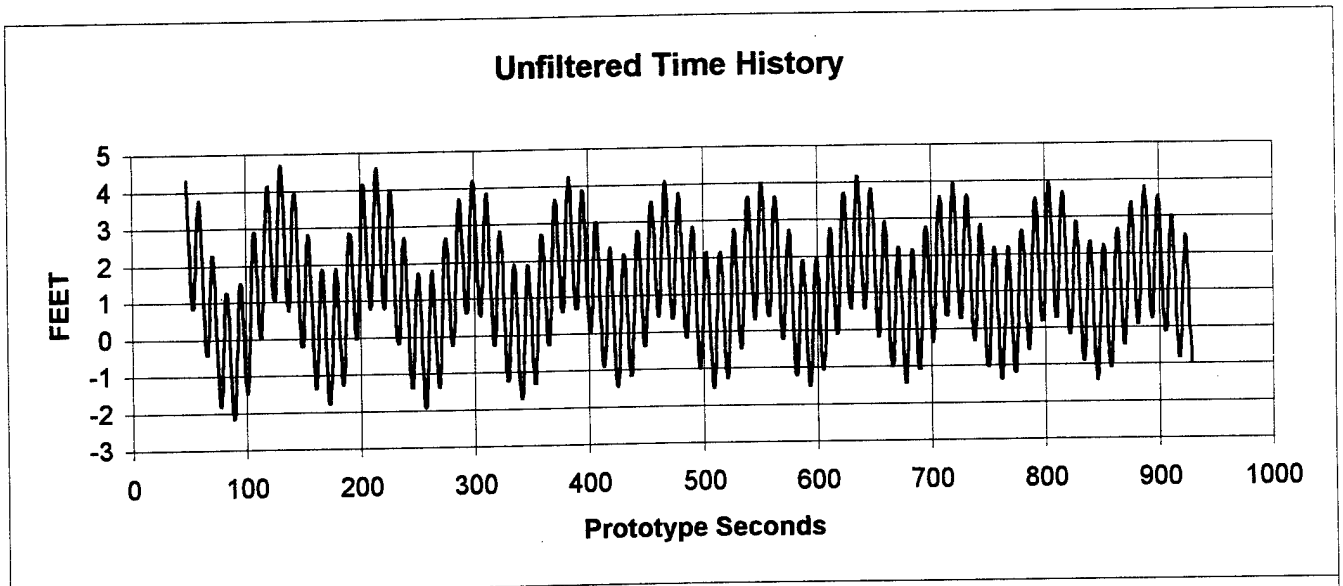
TEST A552 - BUOY 2 TENSION

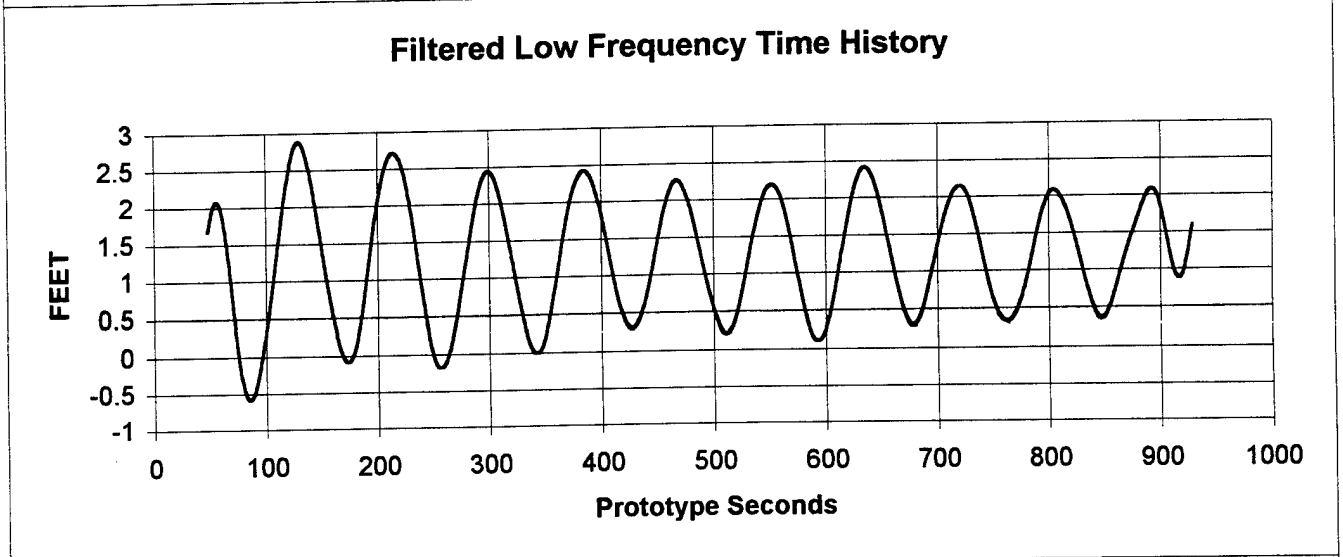


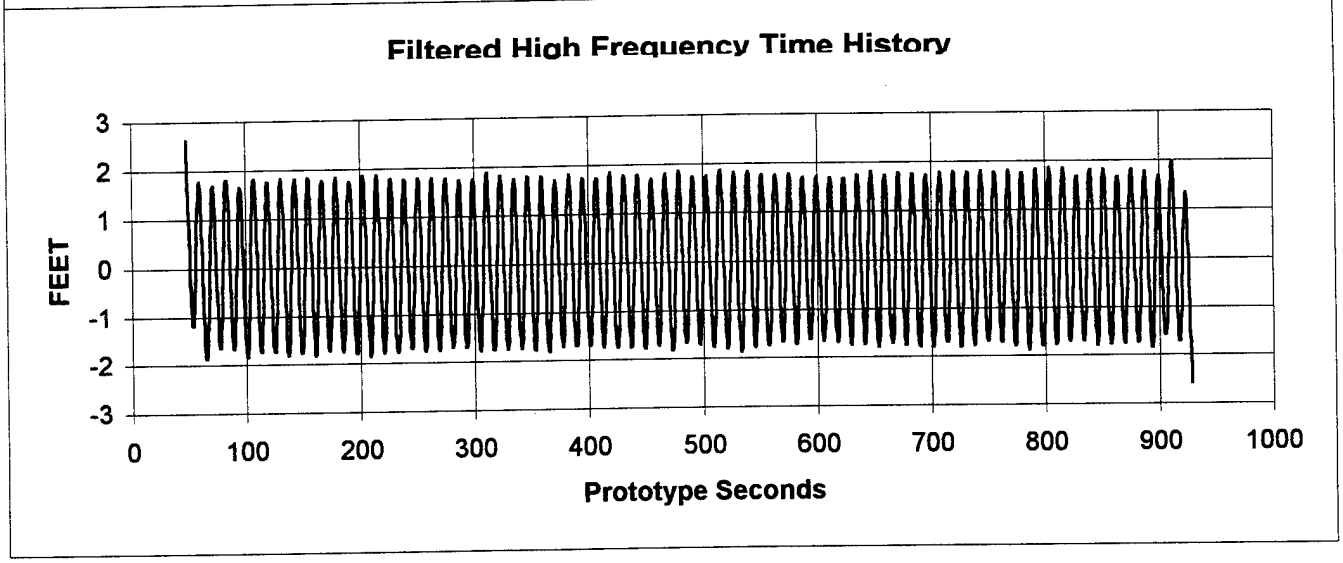



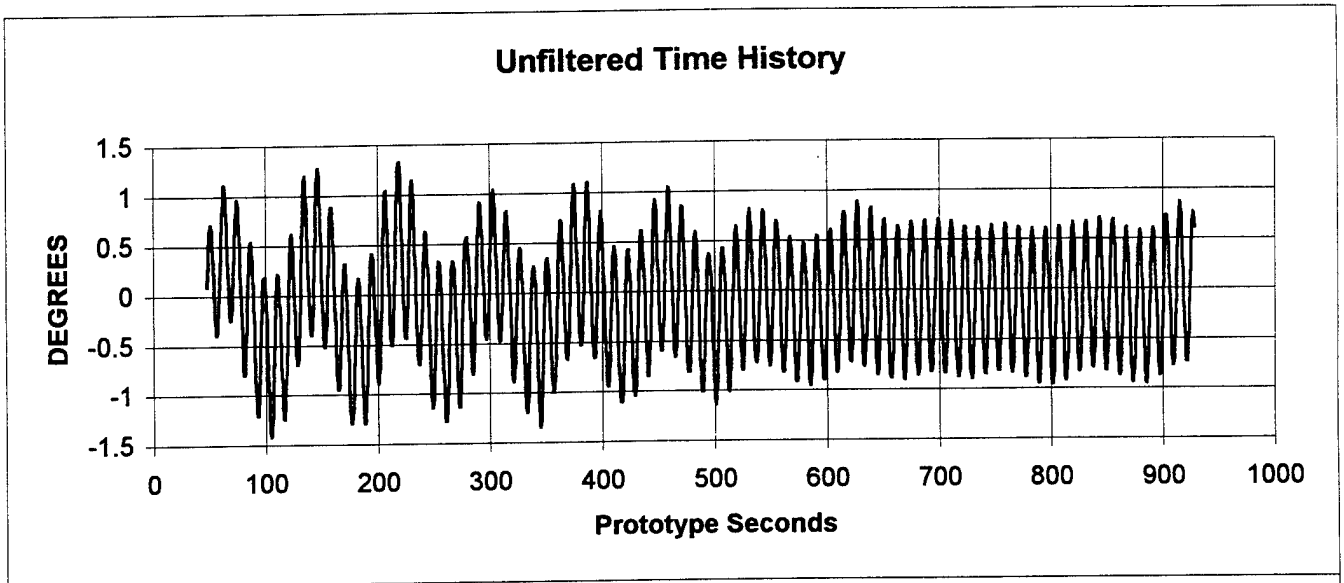
TEST A552 - PT HEAVE

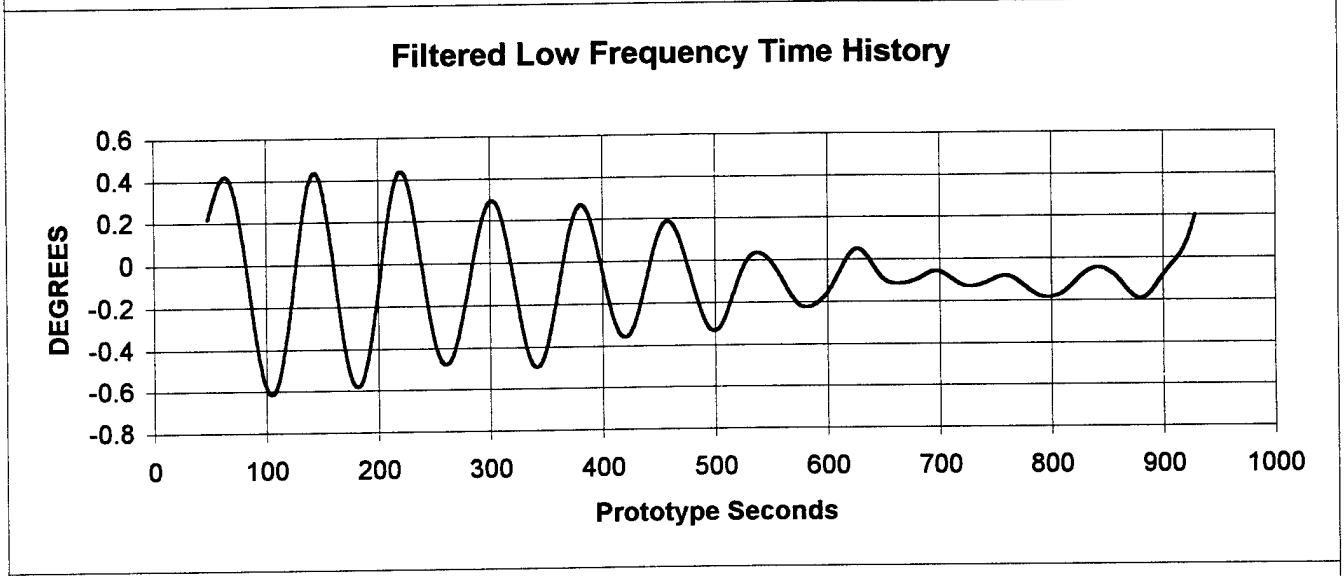


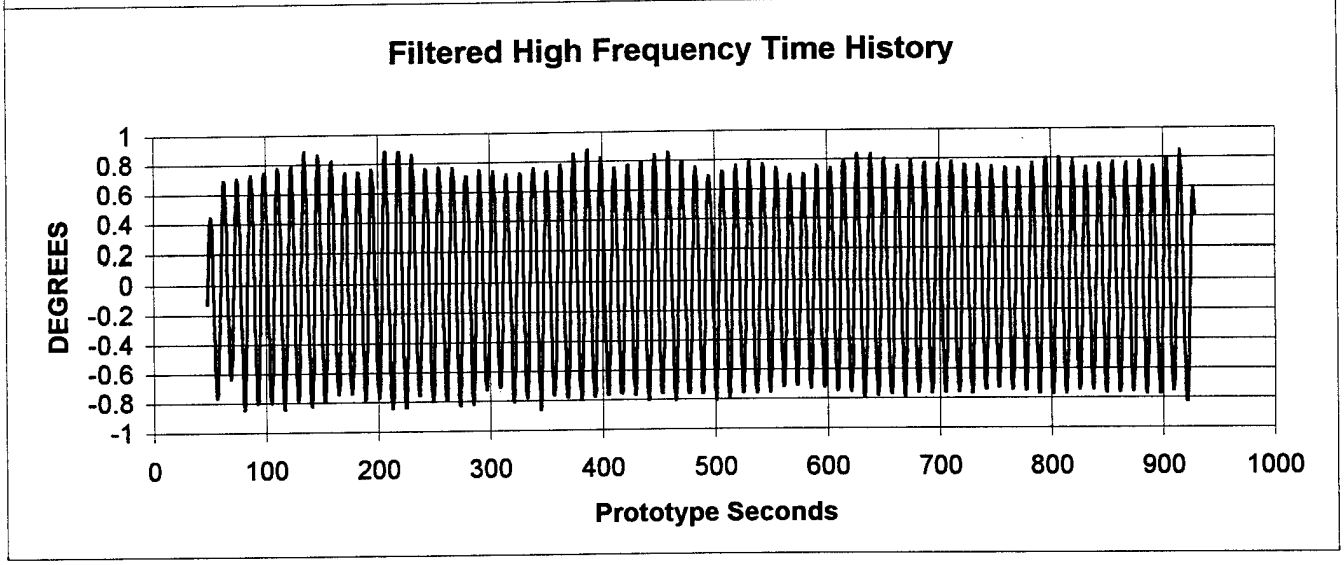



TEST A552 - PITCH

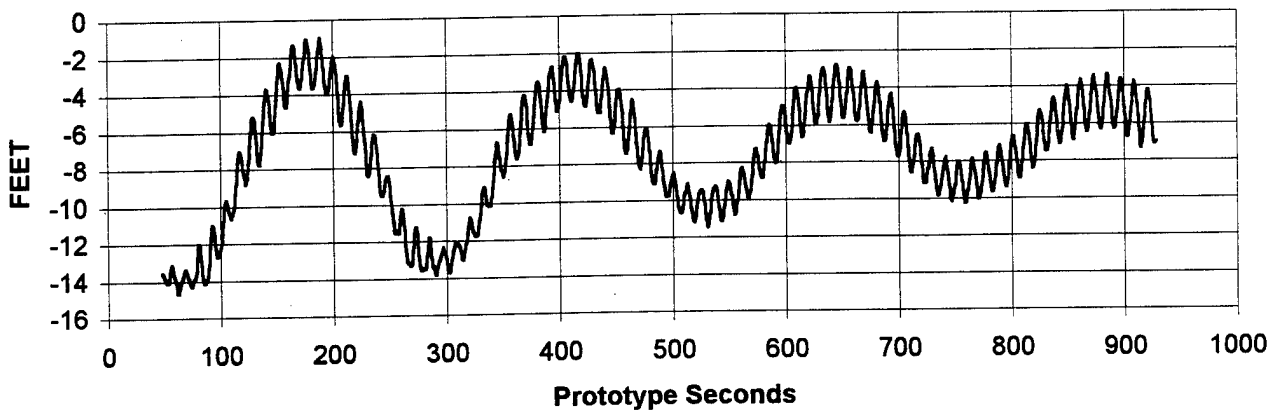


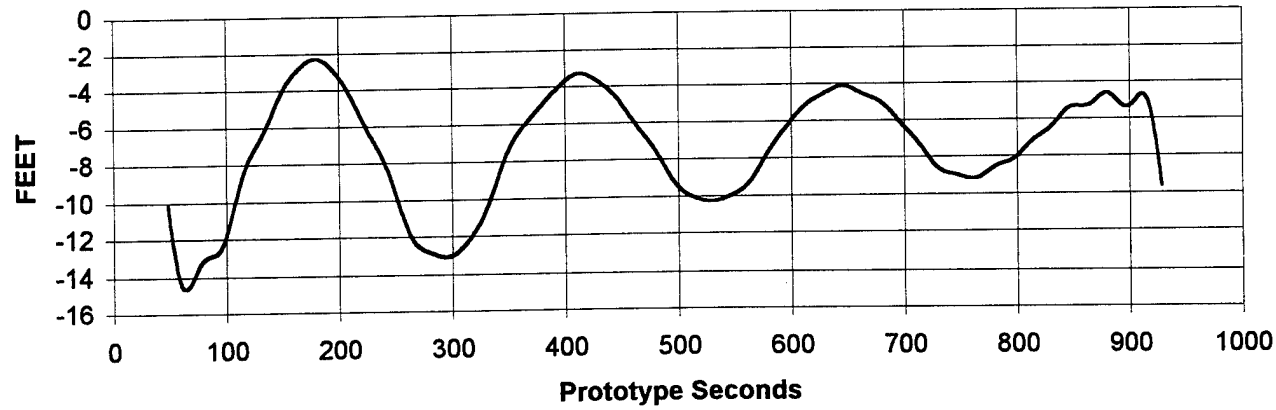



TEST A552 - PT SURGE

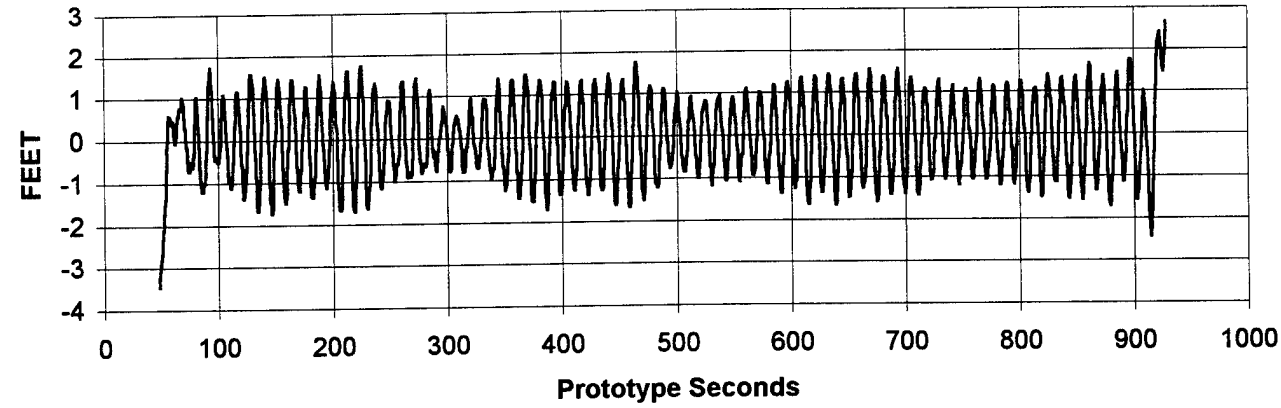
## Unfiltered Time History



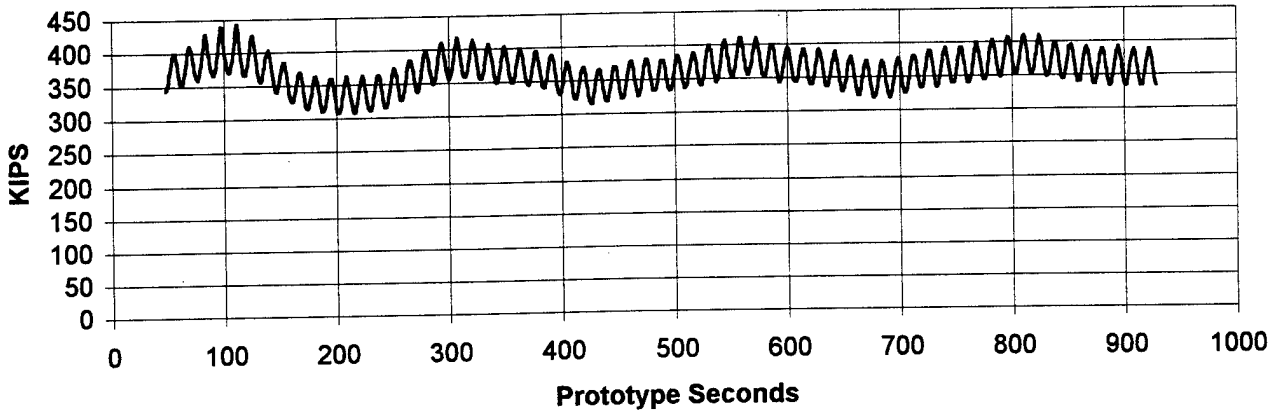

## Filtered Low Frequency Time History



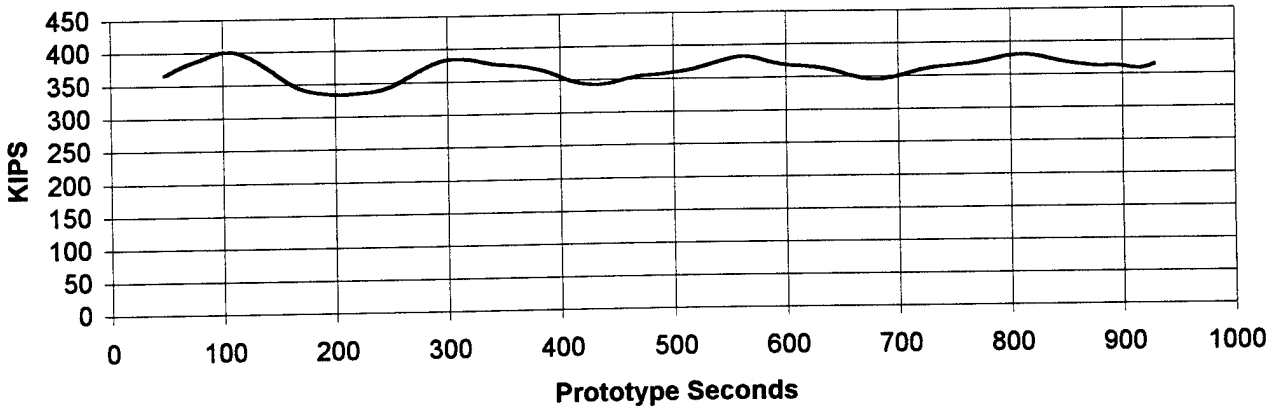

## Filtered High Frequency Time History



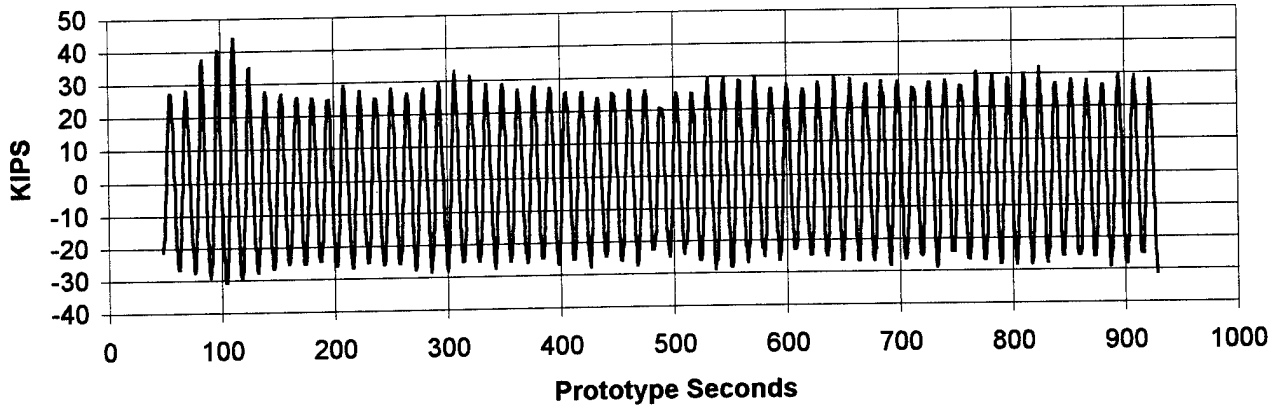
## Unfiltered Time History



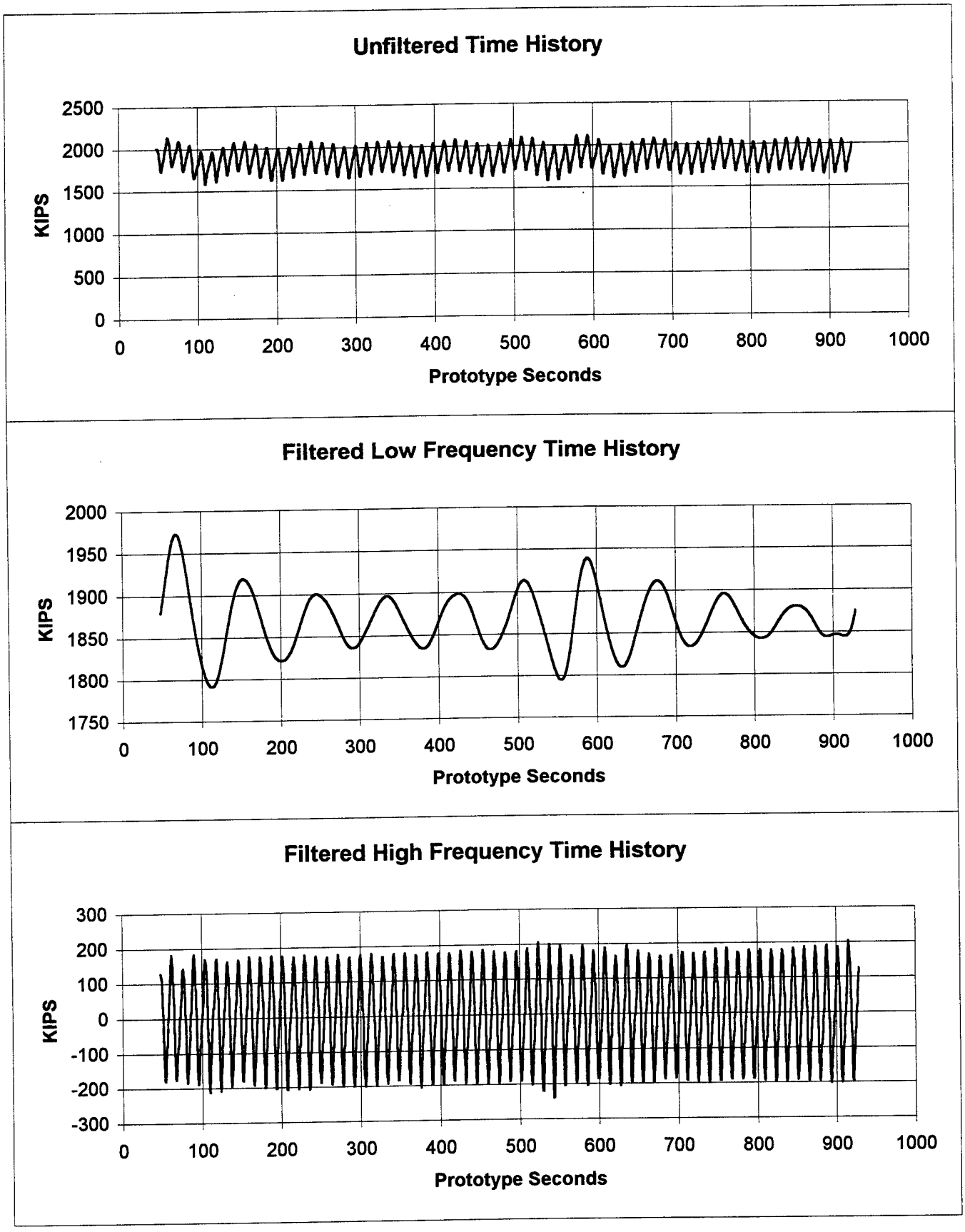

## Filtered Low Frequency Time History




## Filtered High Frequency Time History

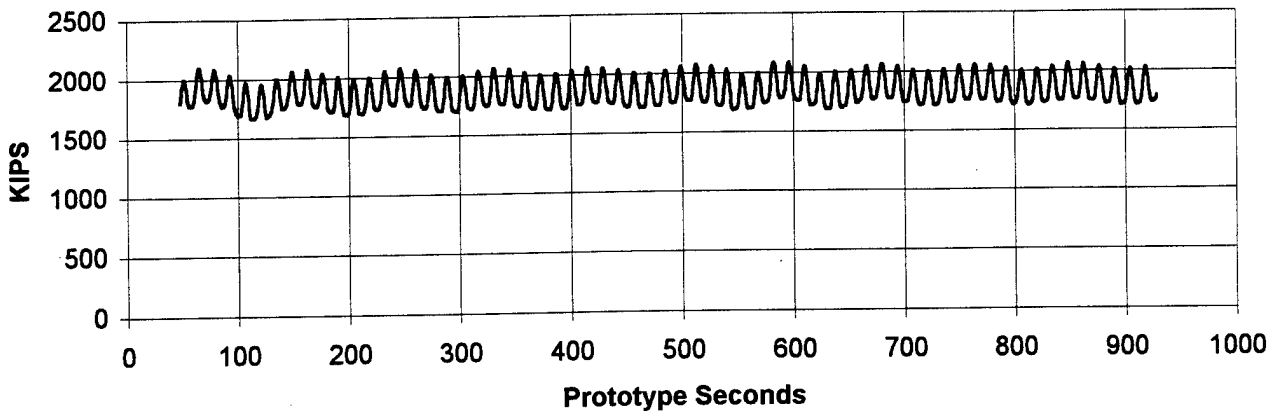


TEST A553 - BUOY 1 TENSION

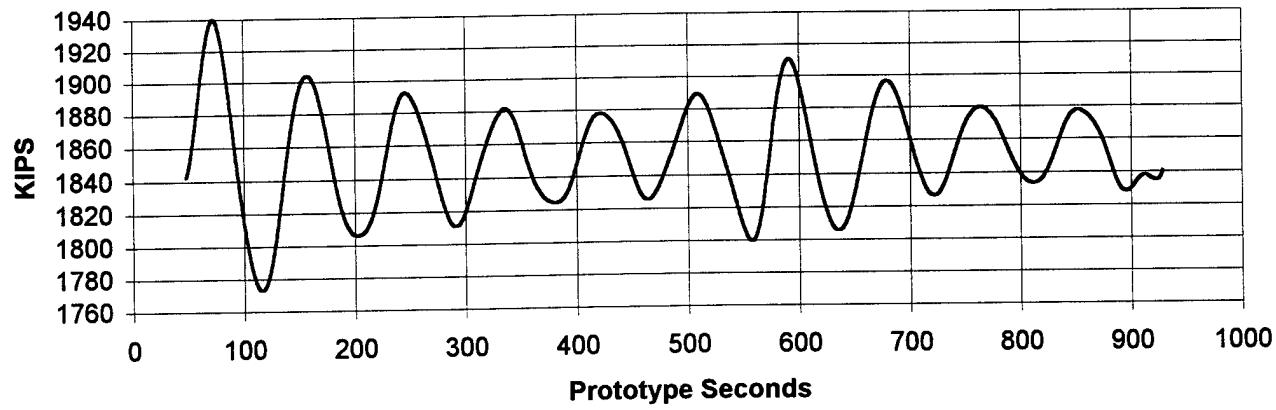


TEST A553 - BUOY 2 TENSION

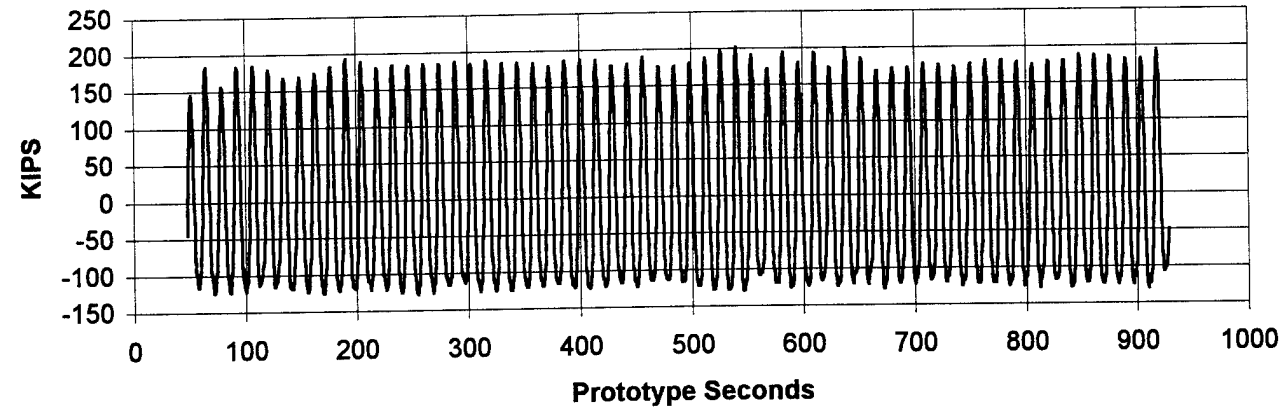
## Unfiltered Time History



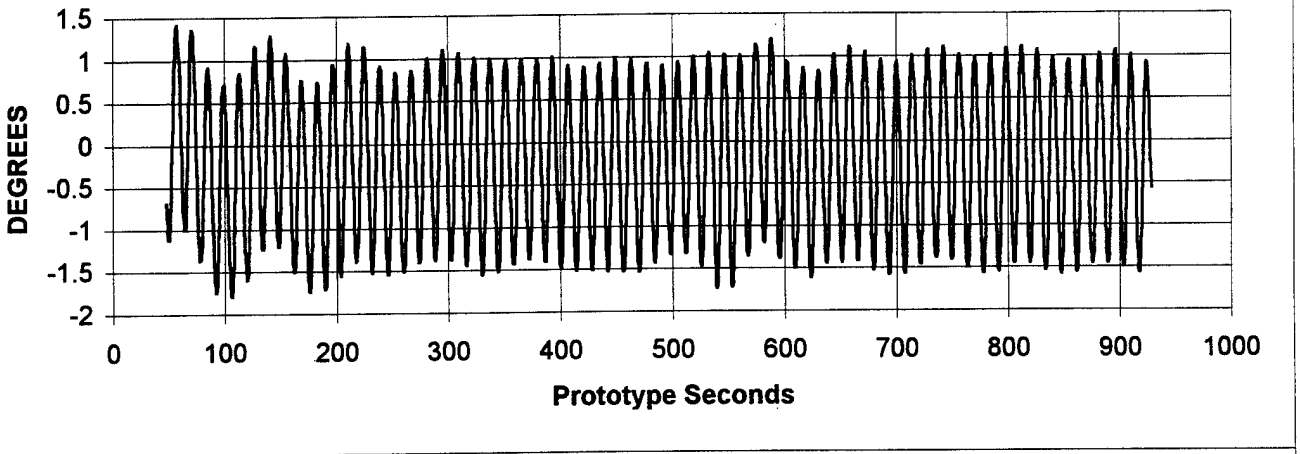

## Filtered Low Frequency Time History

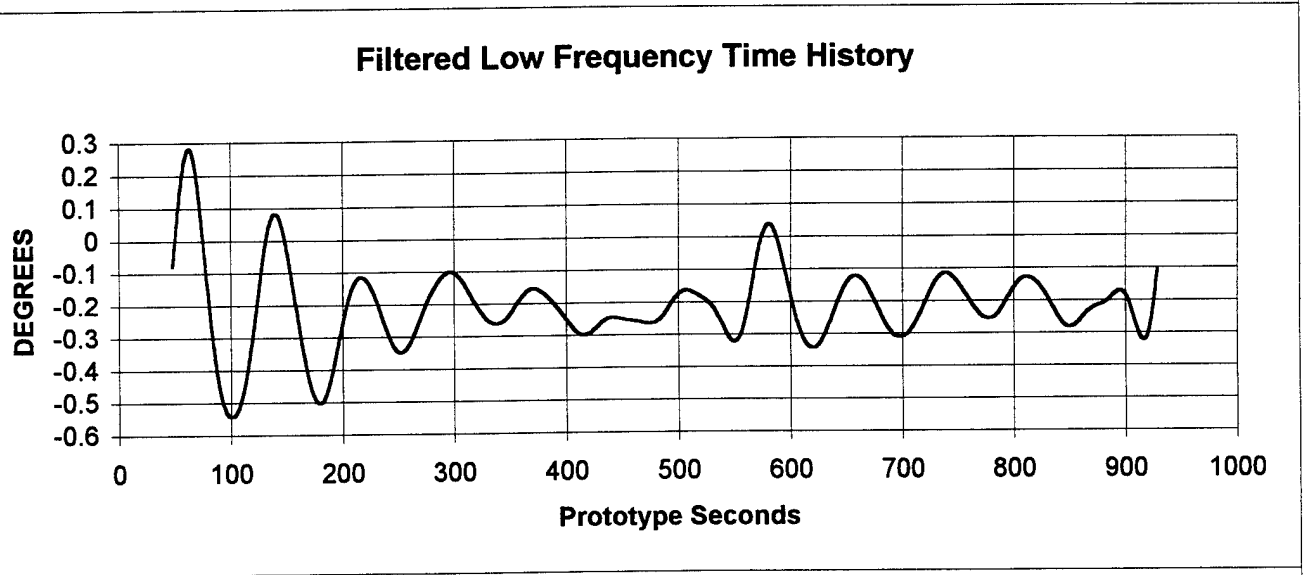


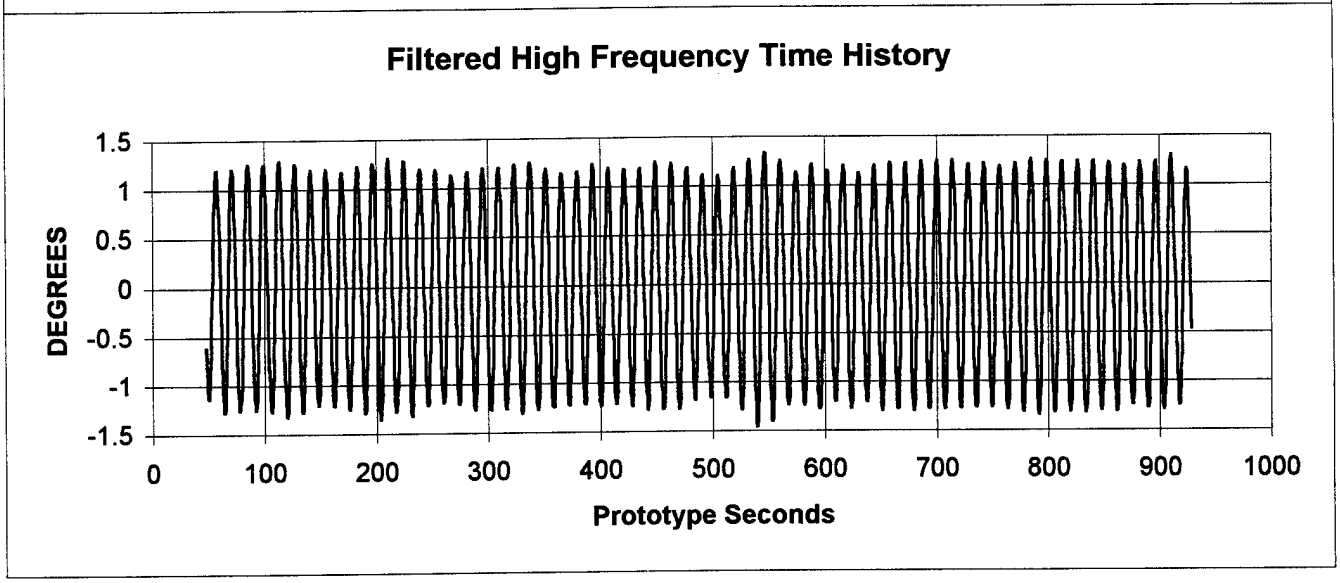

## Filtered High Frequency Time History



TEST A553 - PITCH

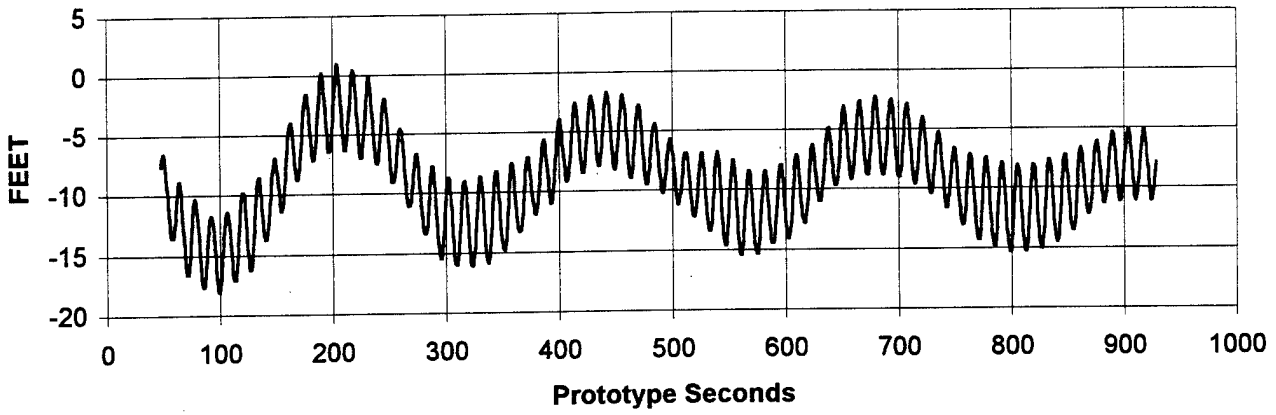


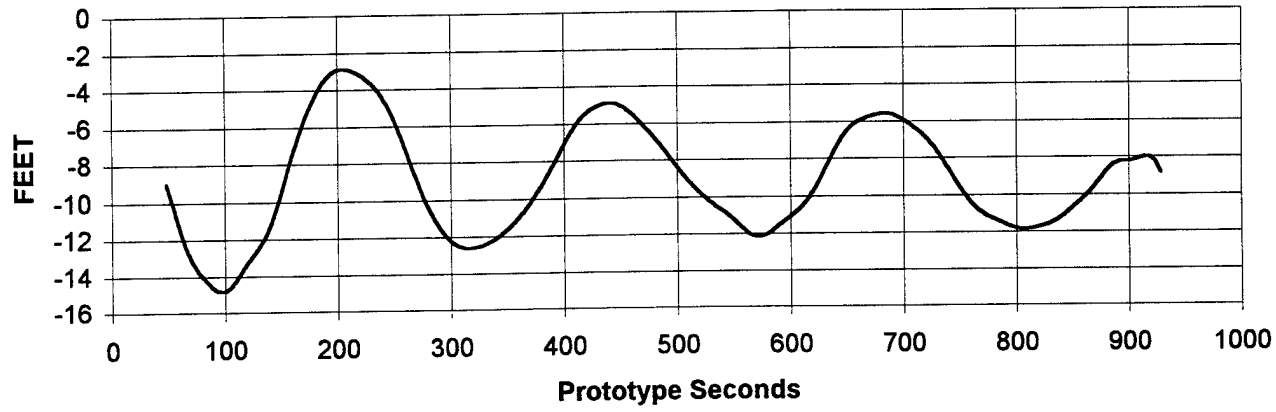



TEST A553 - PT SURGE

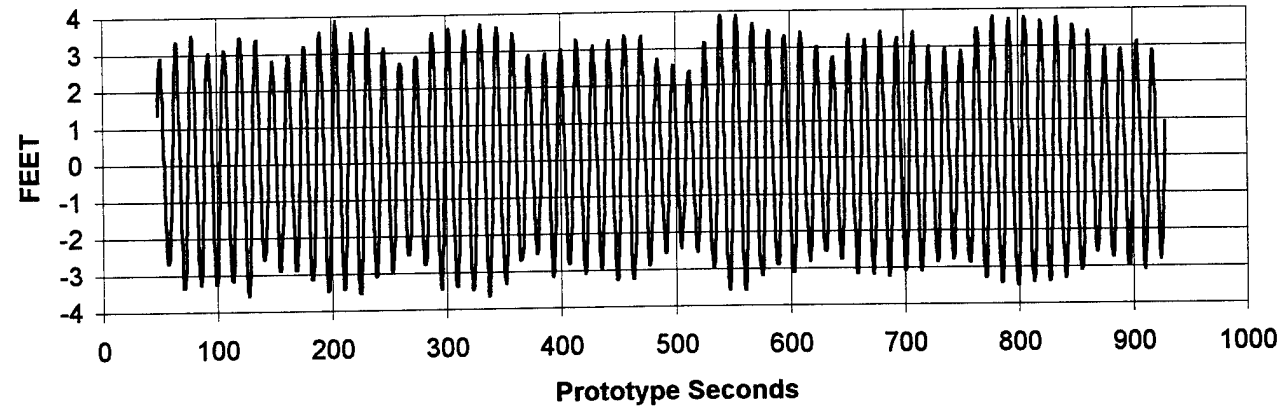
## Unfiltered Time History



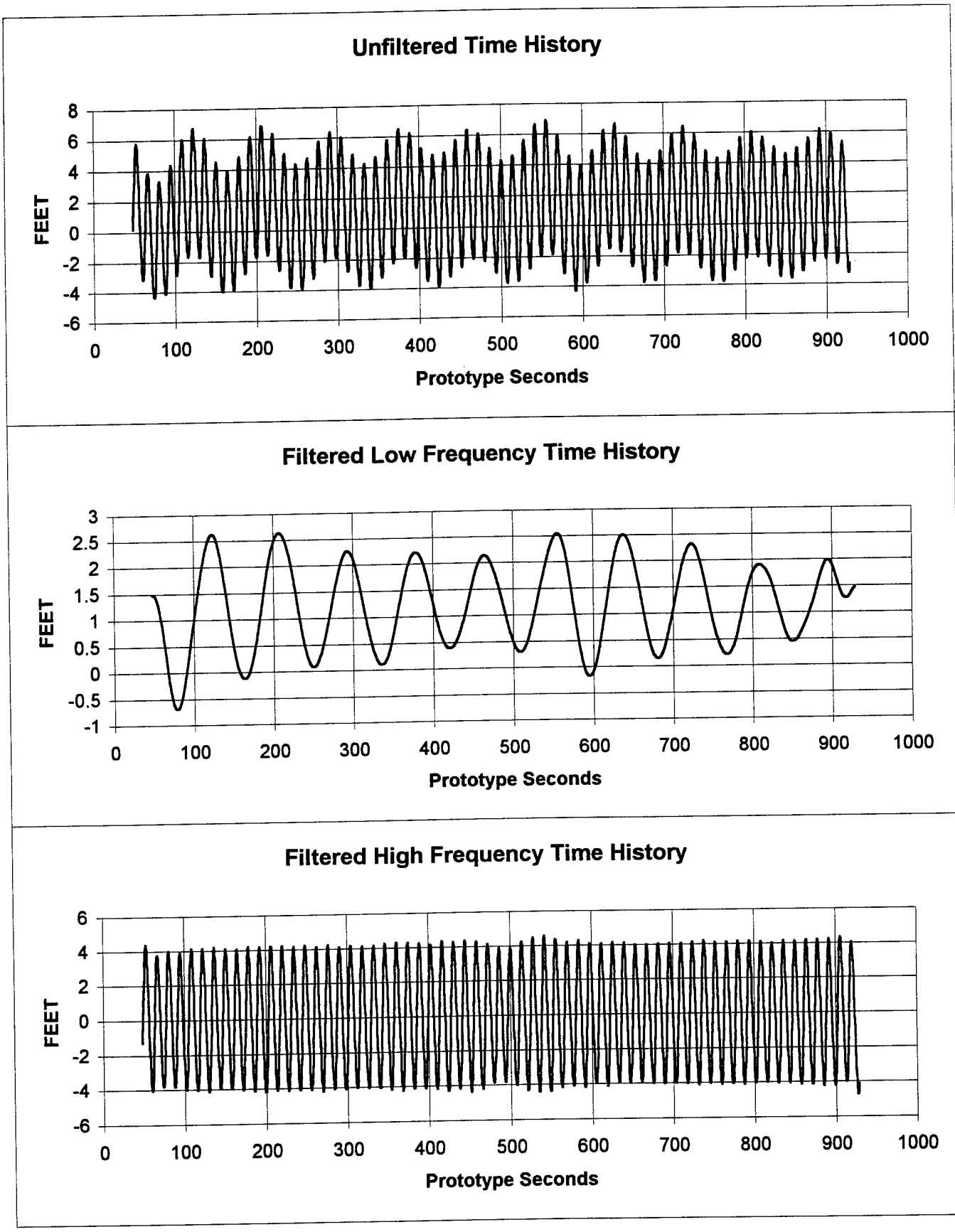

## Filtered Low Frequency Time History

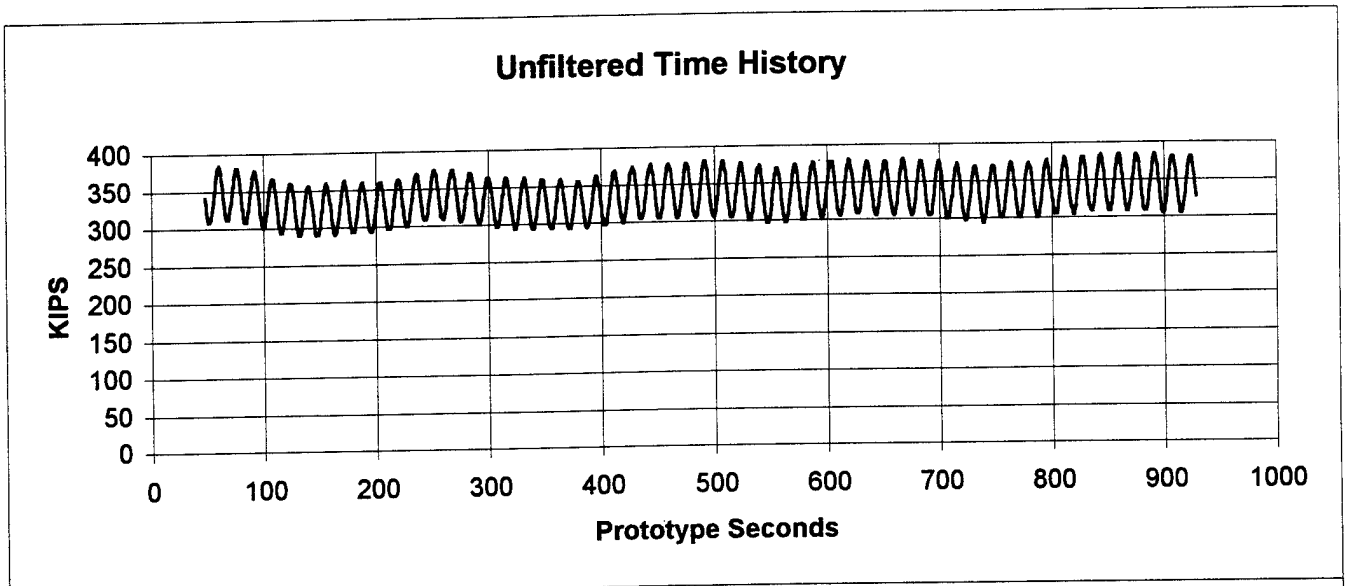


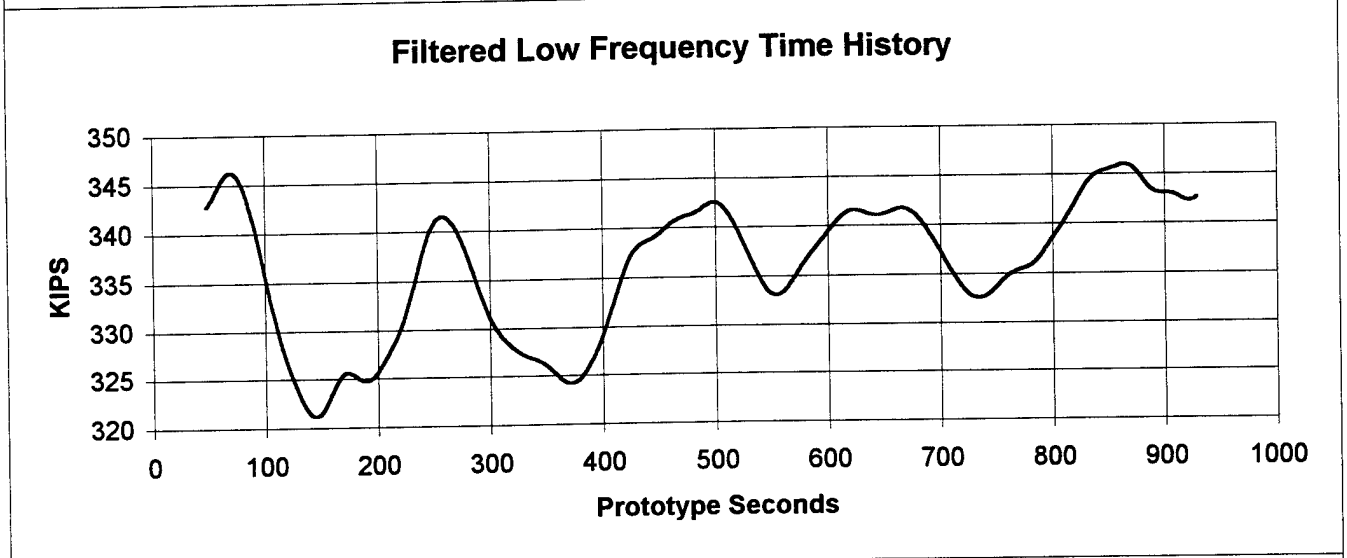

## Filtered High Frequency Time History

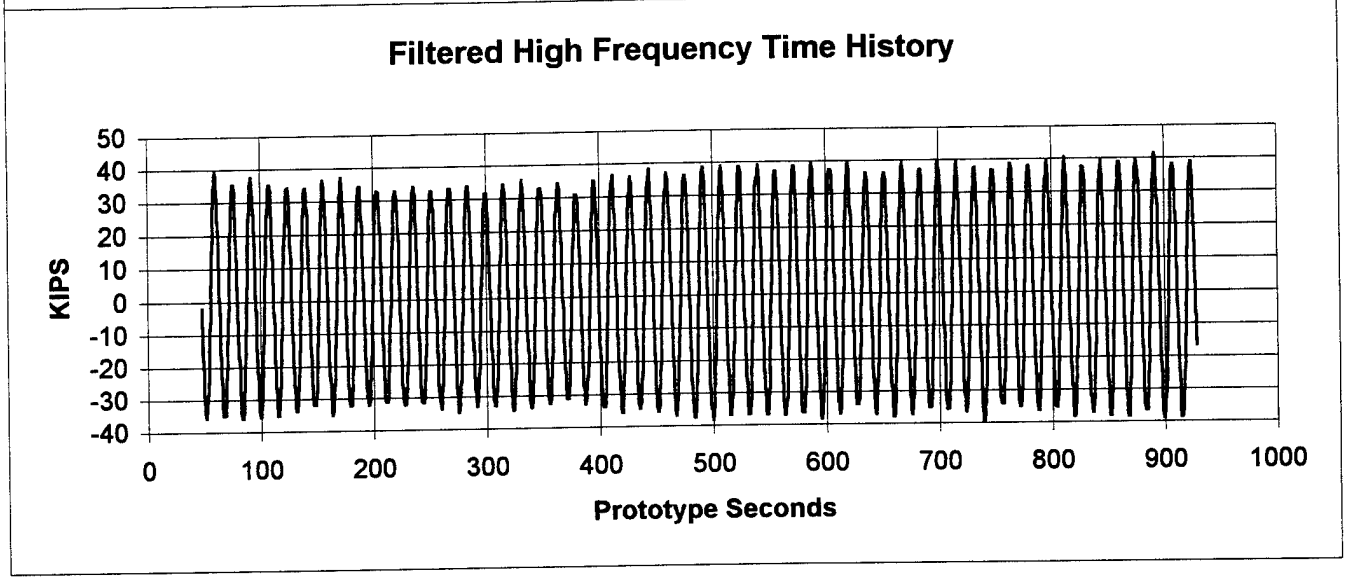


TEST A553 - PT HEAVE

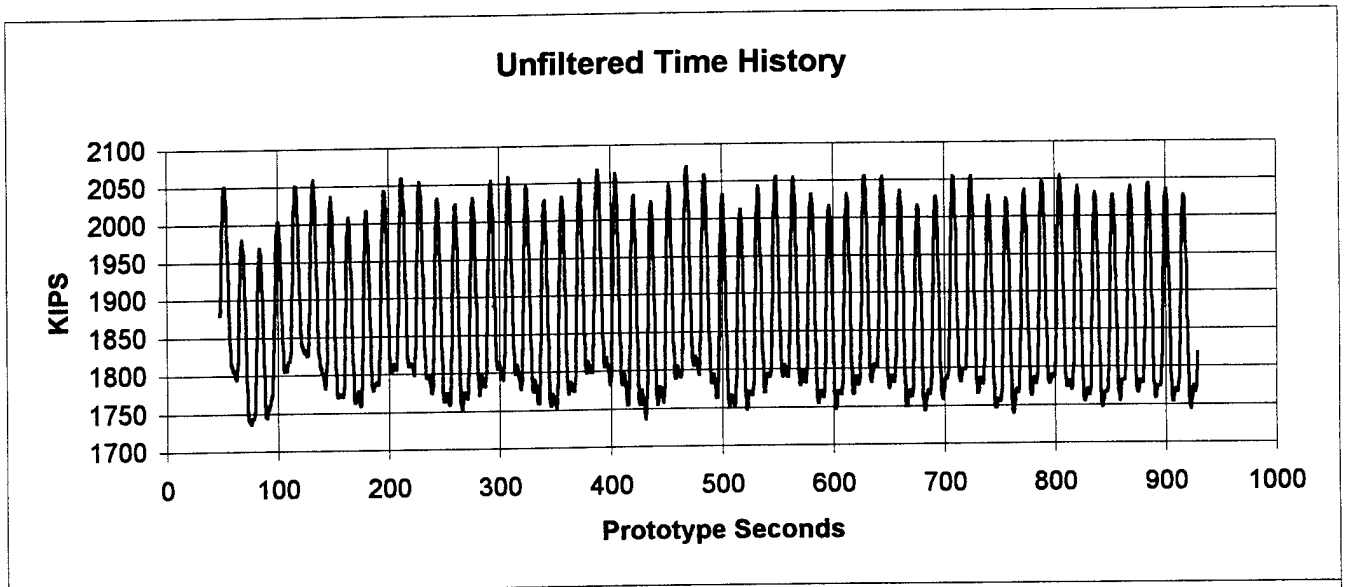


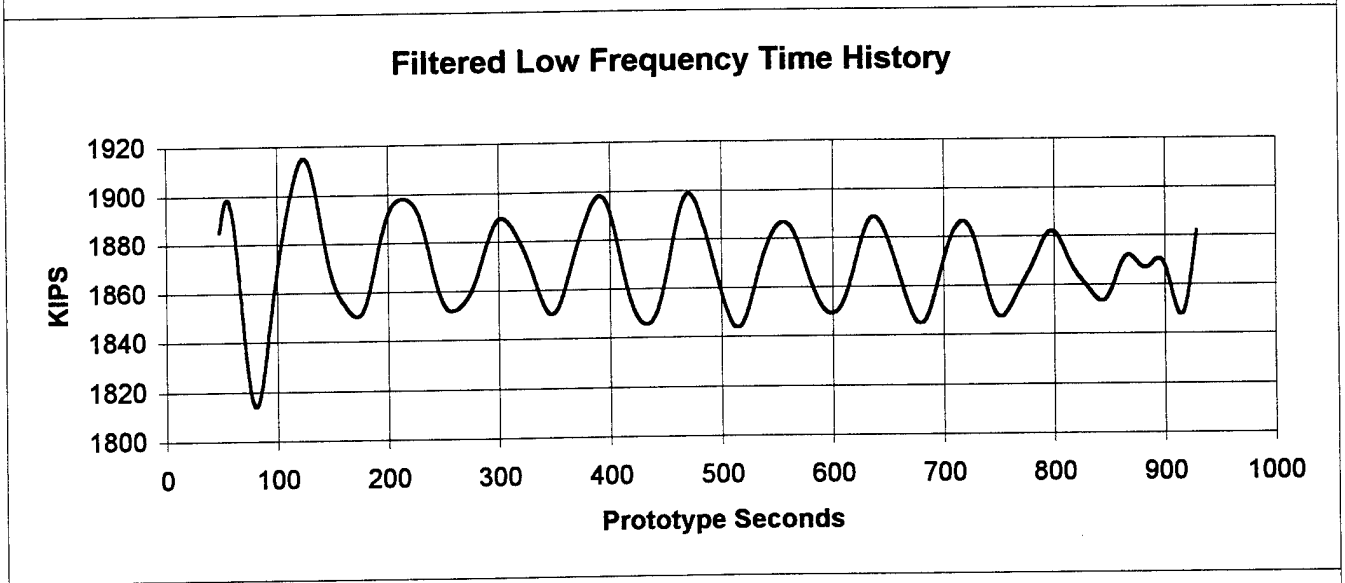

Unfiltered Time History
KIPS
400
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

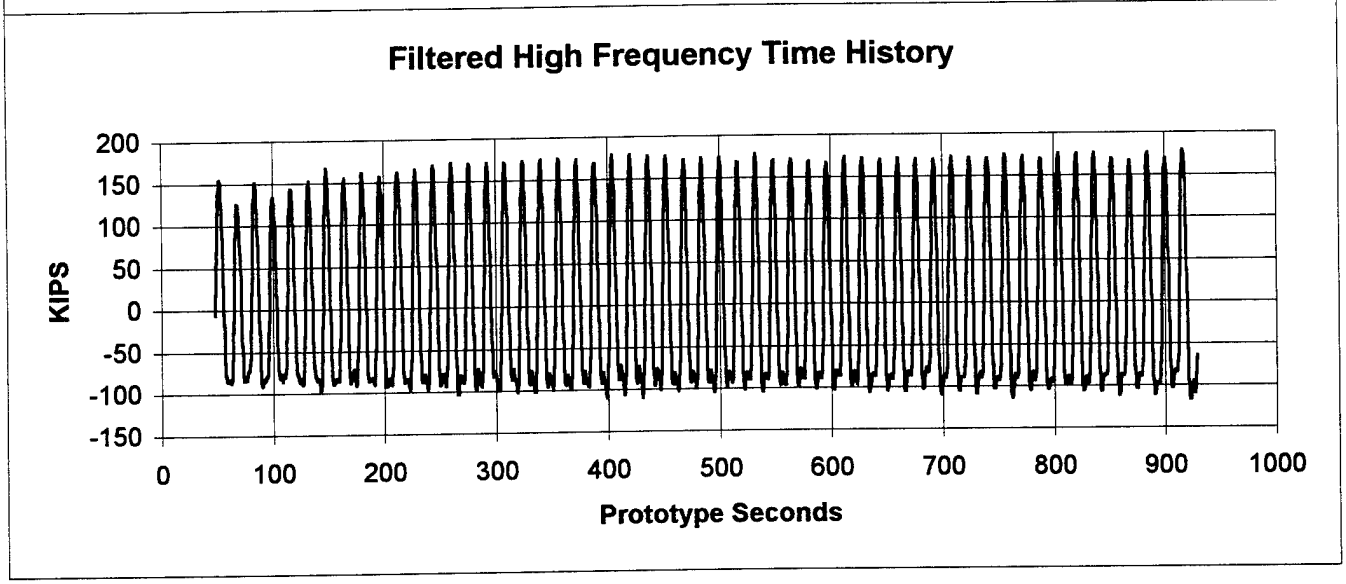

Filtered Low Frequency Time History
KIPS
350
345
340
335
330
325
320
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds


Filtered High Frequency Time History
KIPS
50
40
30
20
10
0
-10
-20
-30
-40
0
100
200
300
400
500
600
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800
900
1000
Prototype Seconds

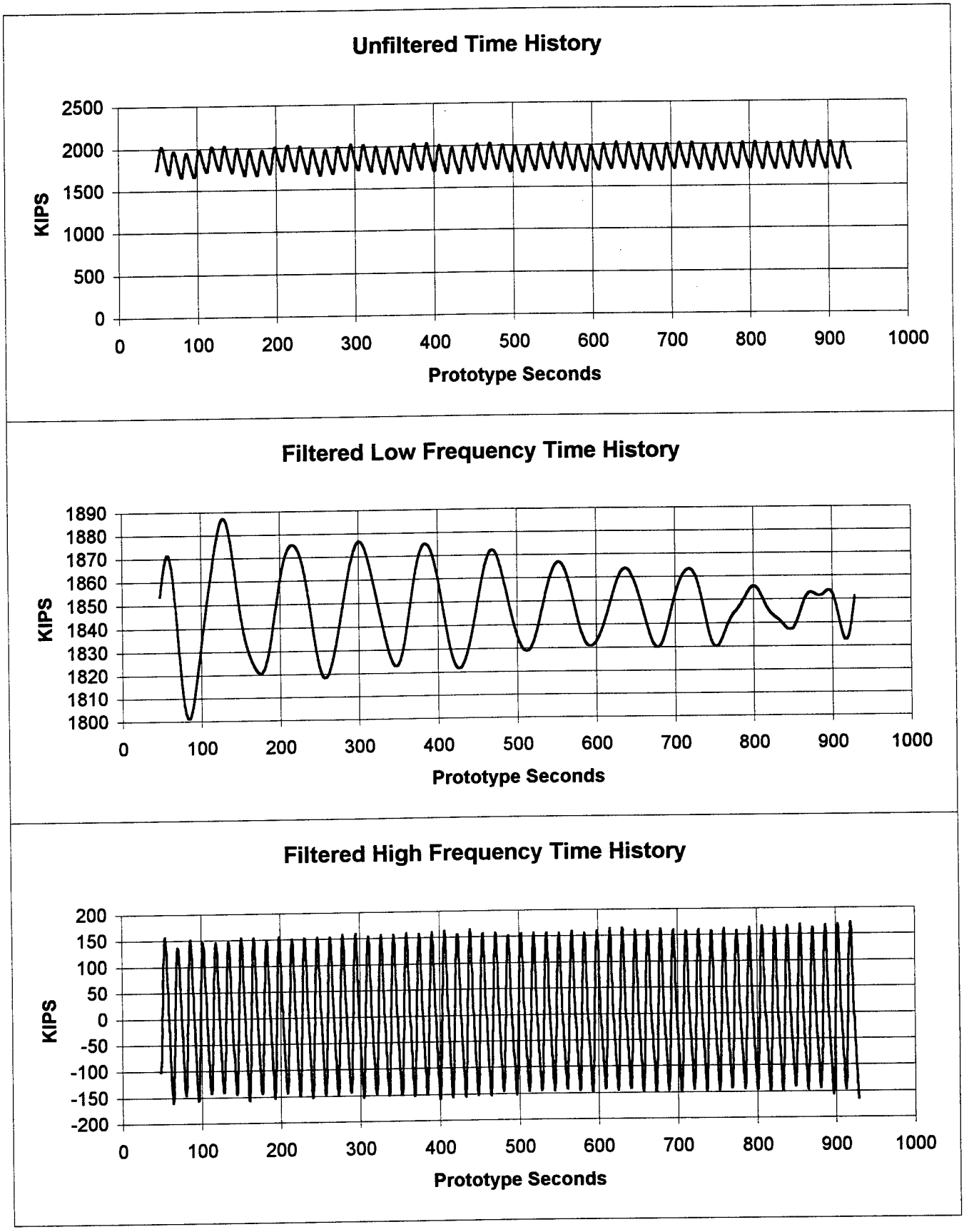
TEST A554 - BUOY 1 TENSION



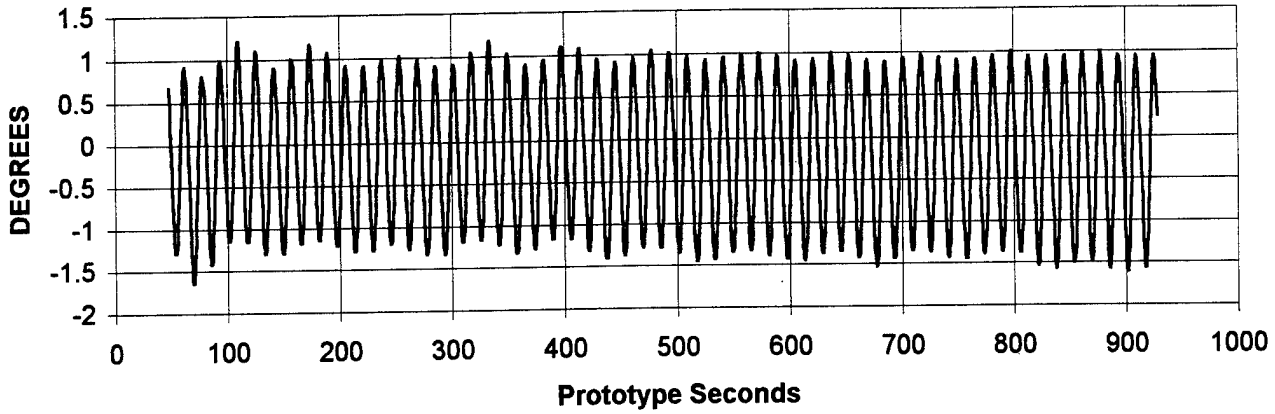



TEST A554 - BUOY 2 TENSION

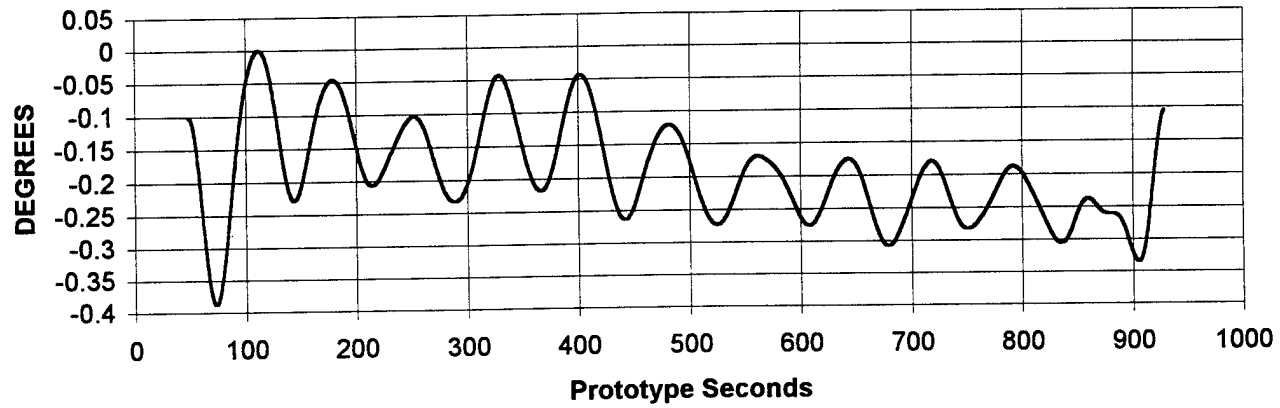


TEST A554 - PITCH

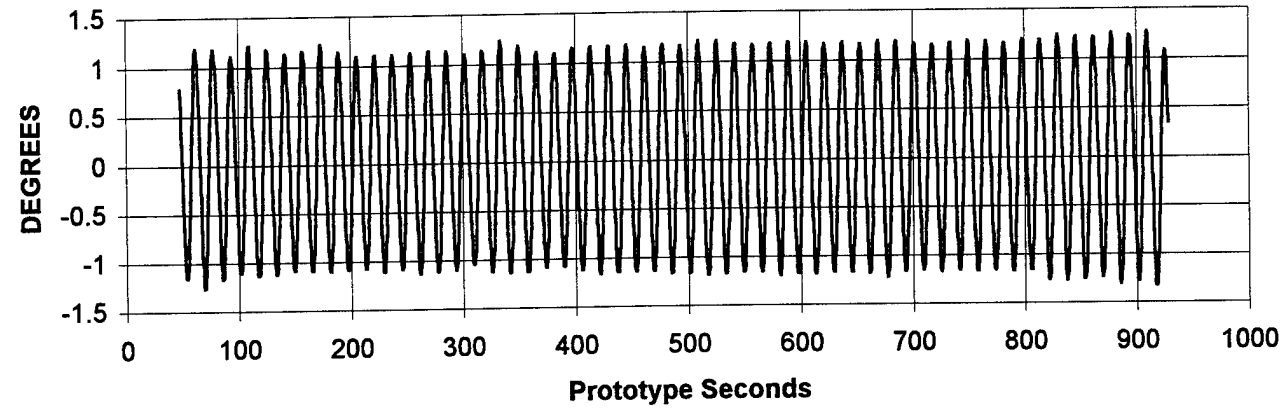
## Unfiltered Time History



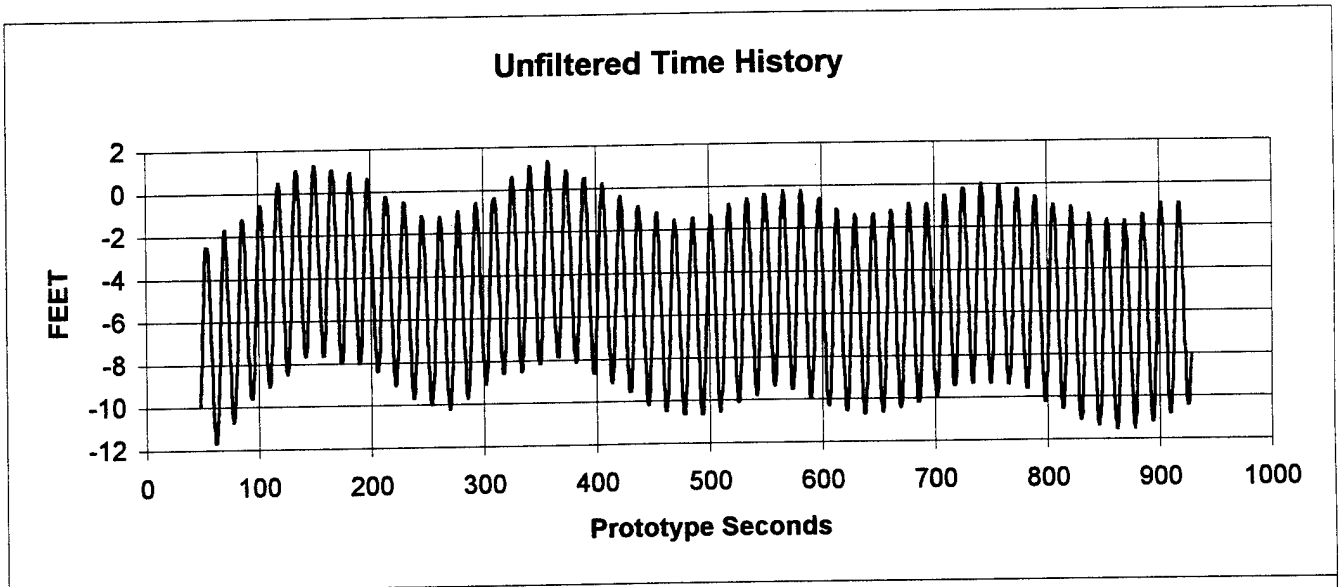

## Filtered Low Frequency Time History

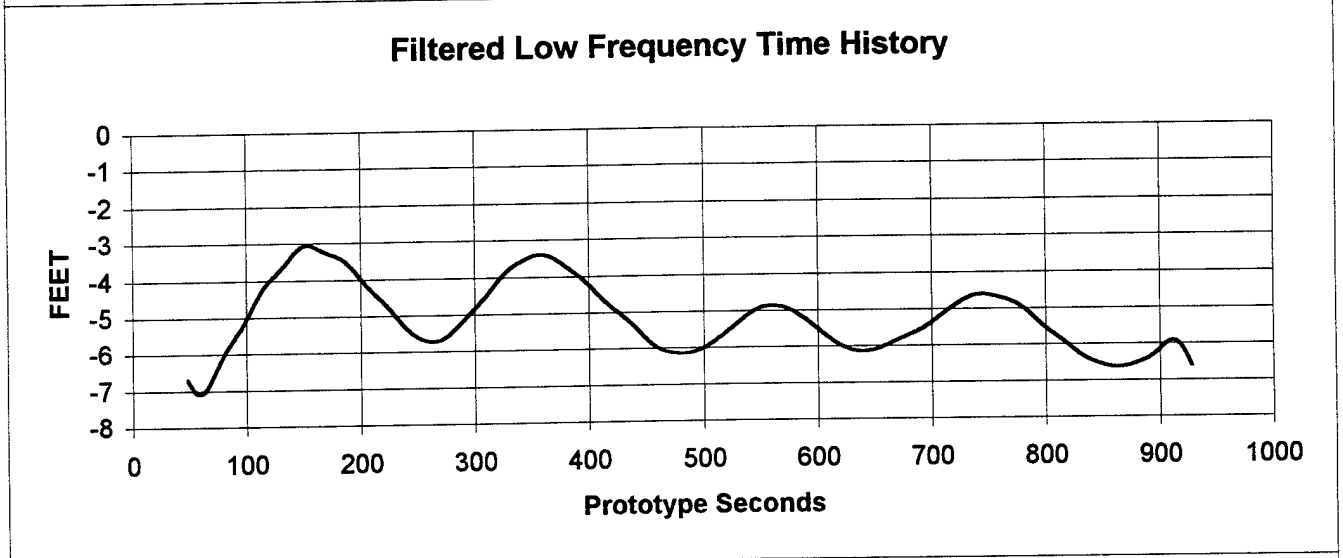


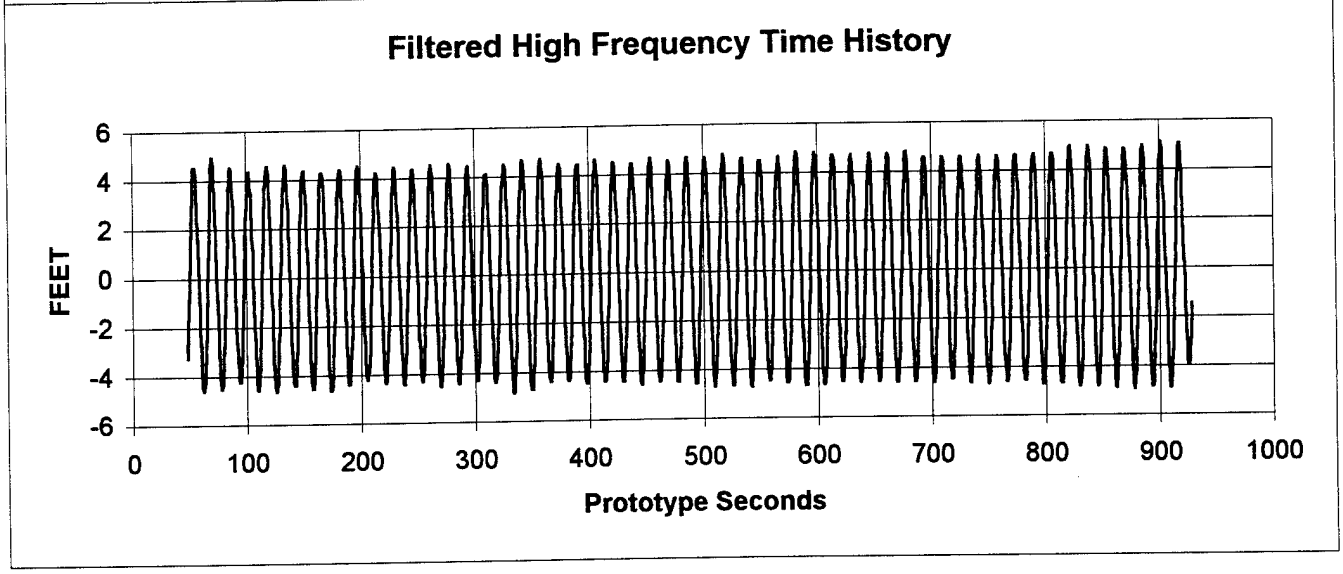

## Filtered High Frequency Time History



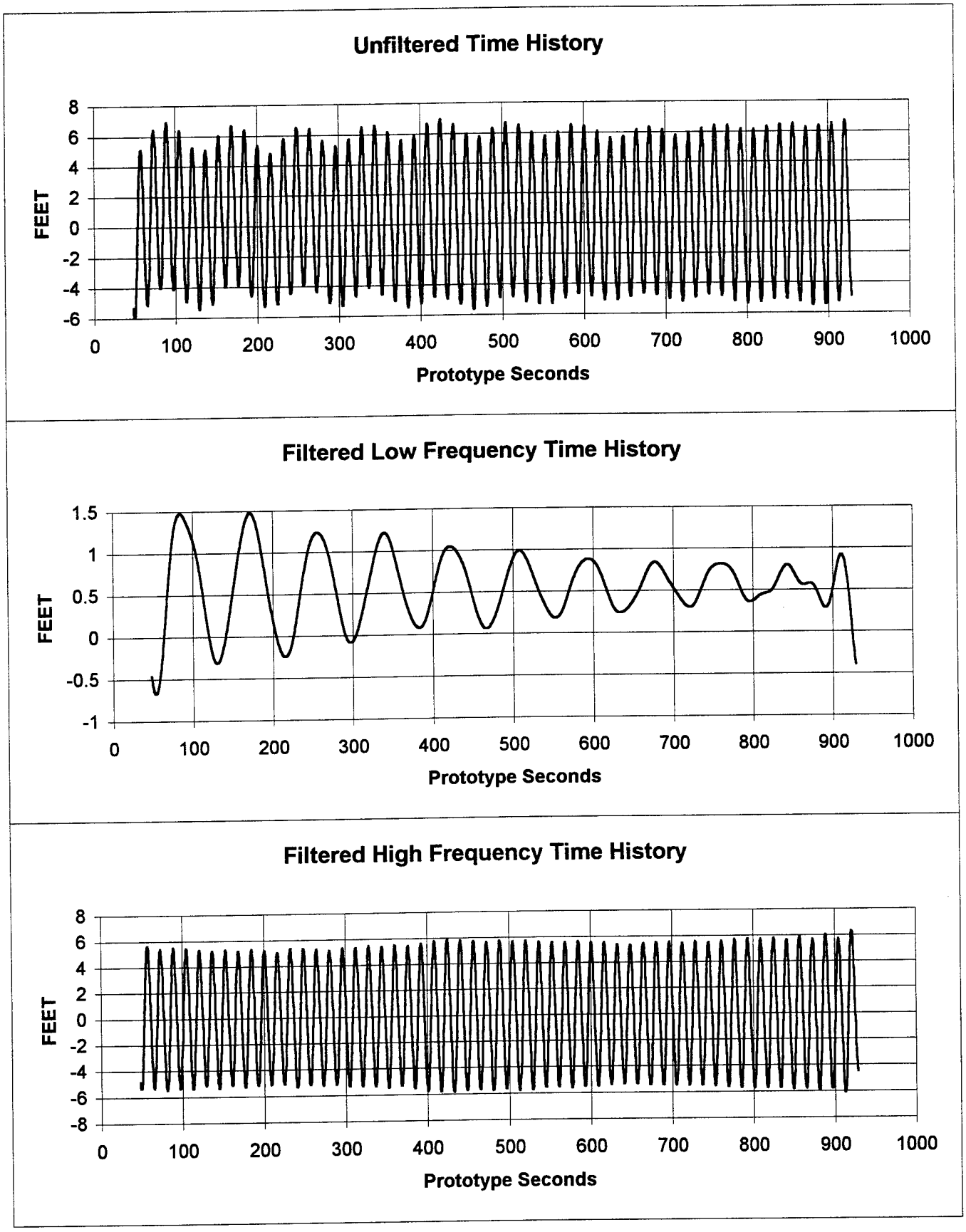
TEST A554 - PT SURGE



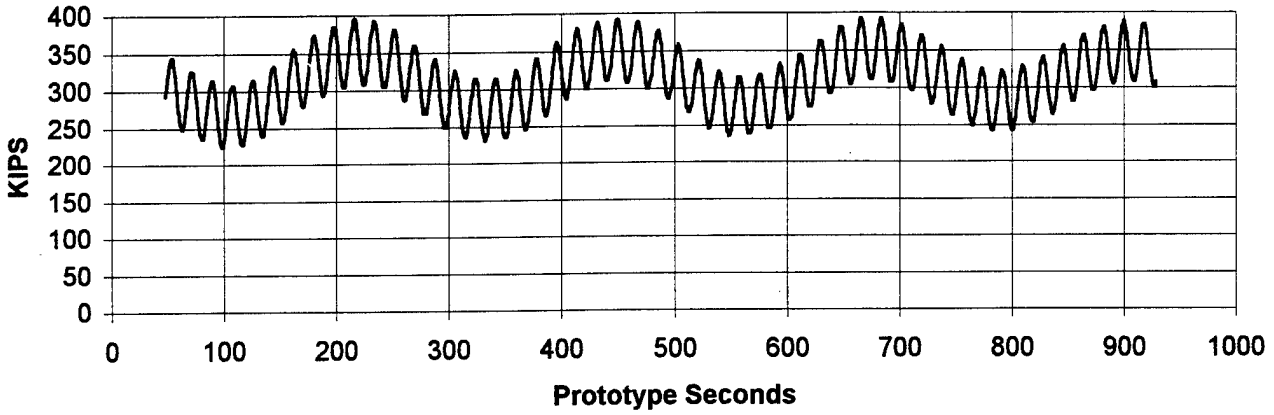



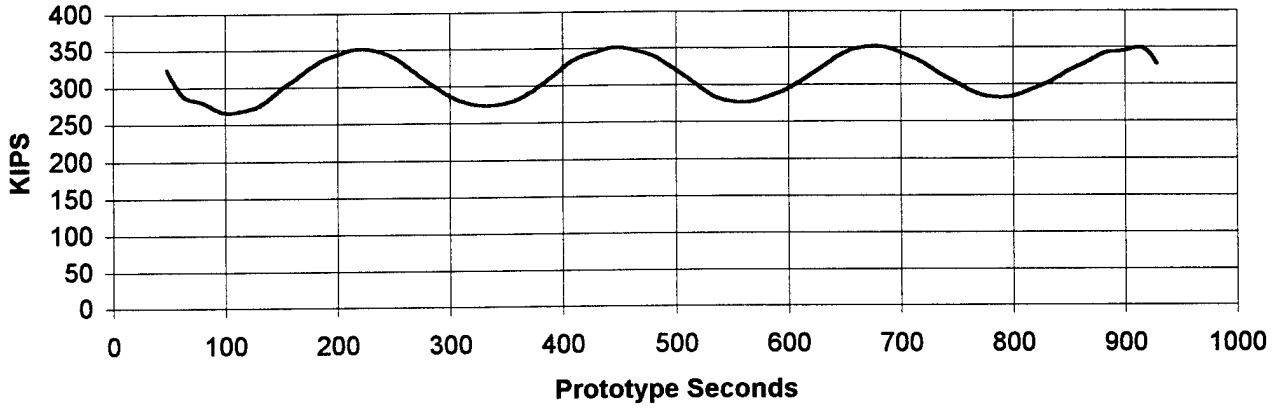
TEST A554 - PT HEAVE



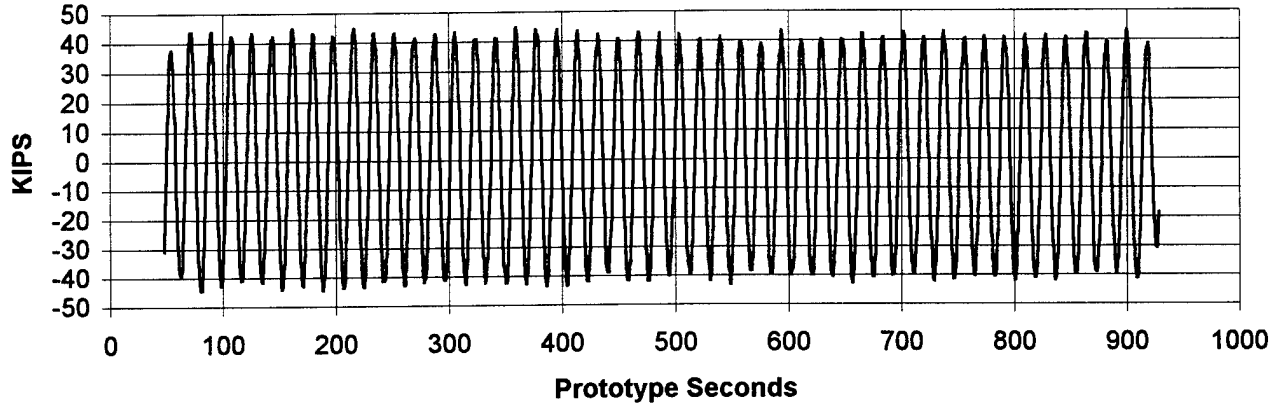
## Unfiltered Time History



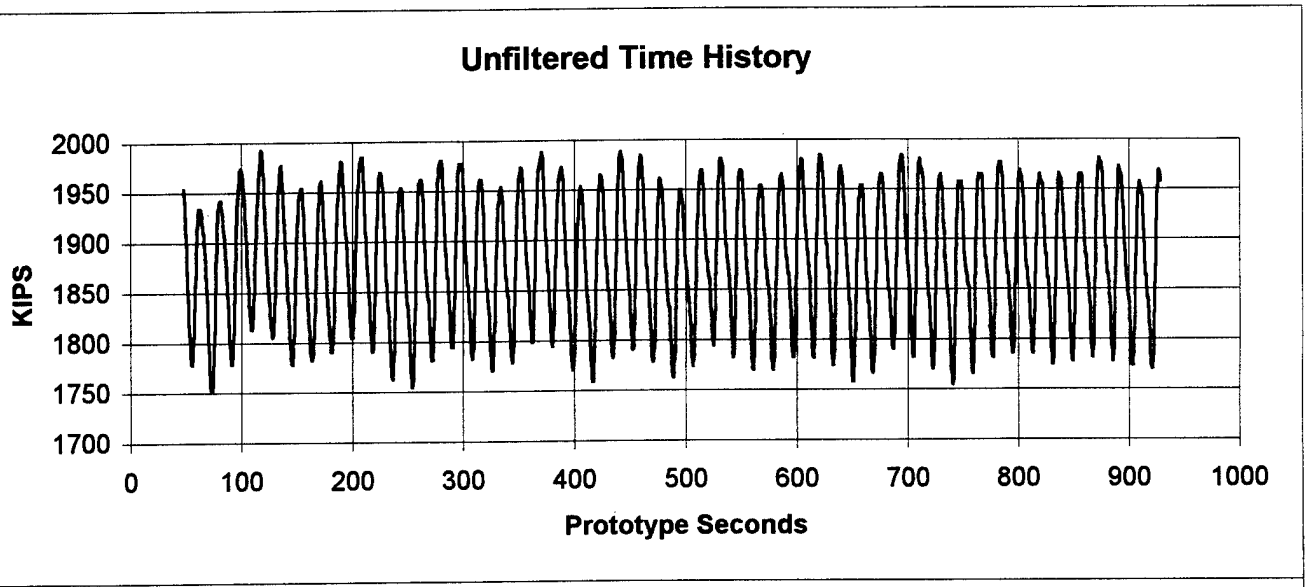

## Filtered Low Frequency Time History

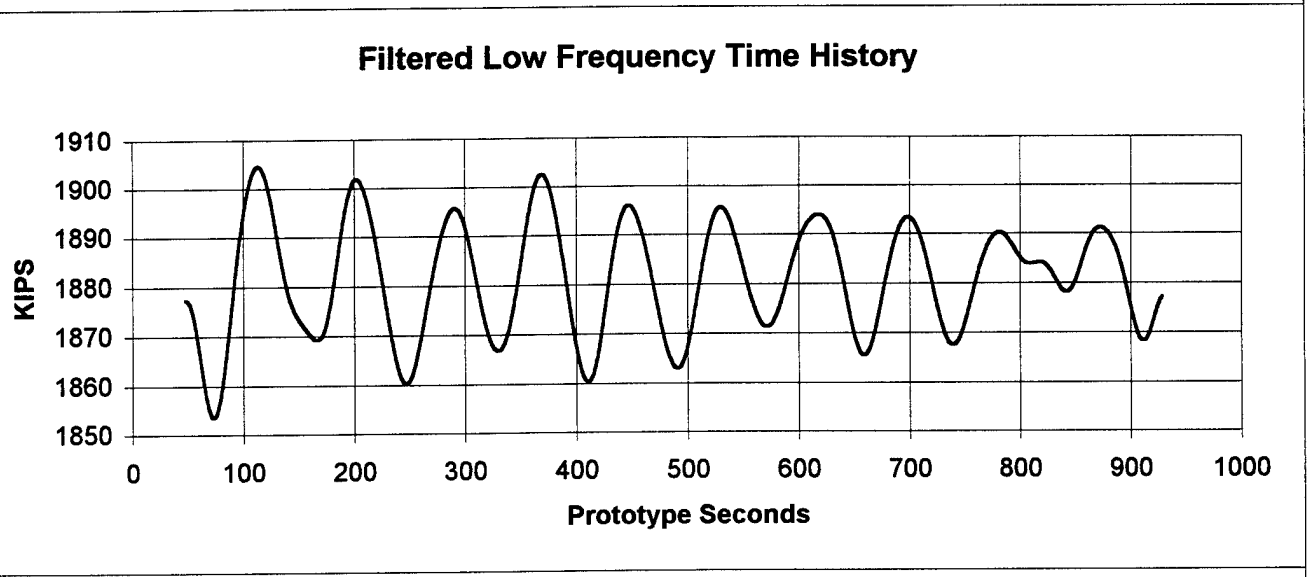


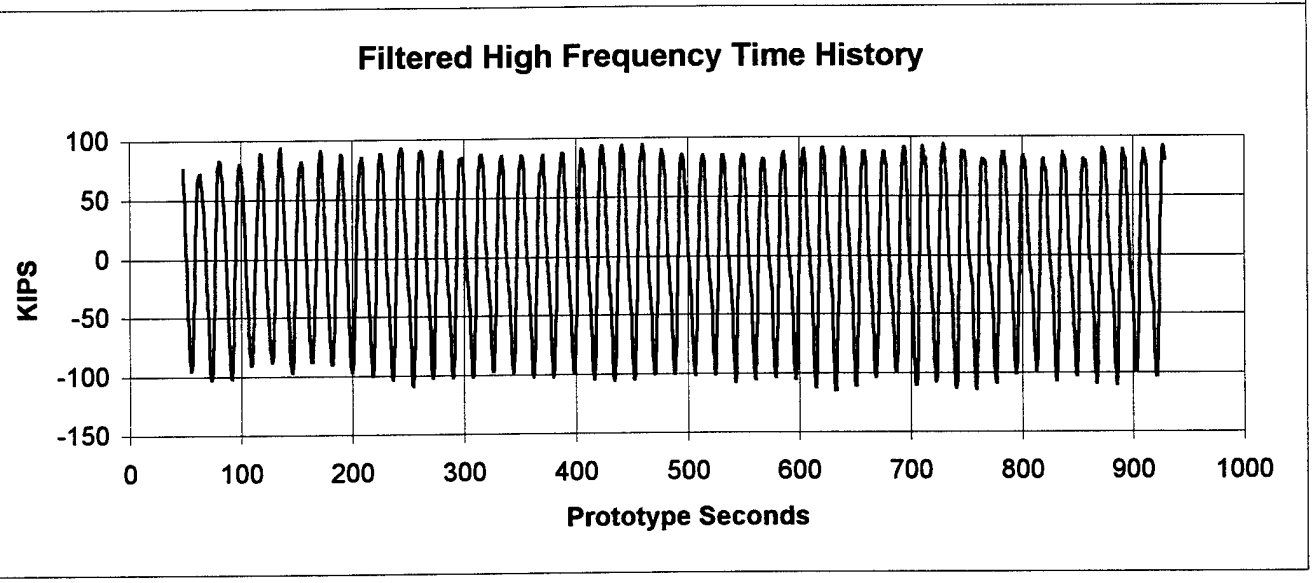

## Filtered High Frequency Time History



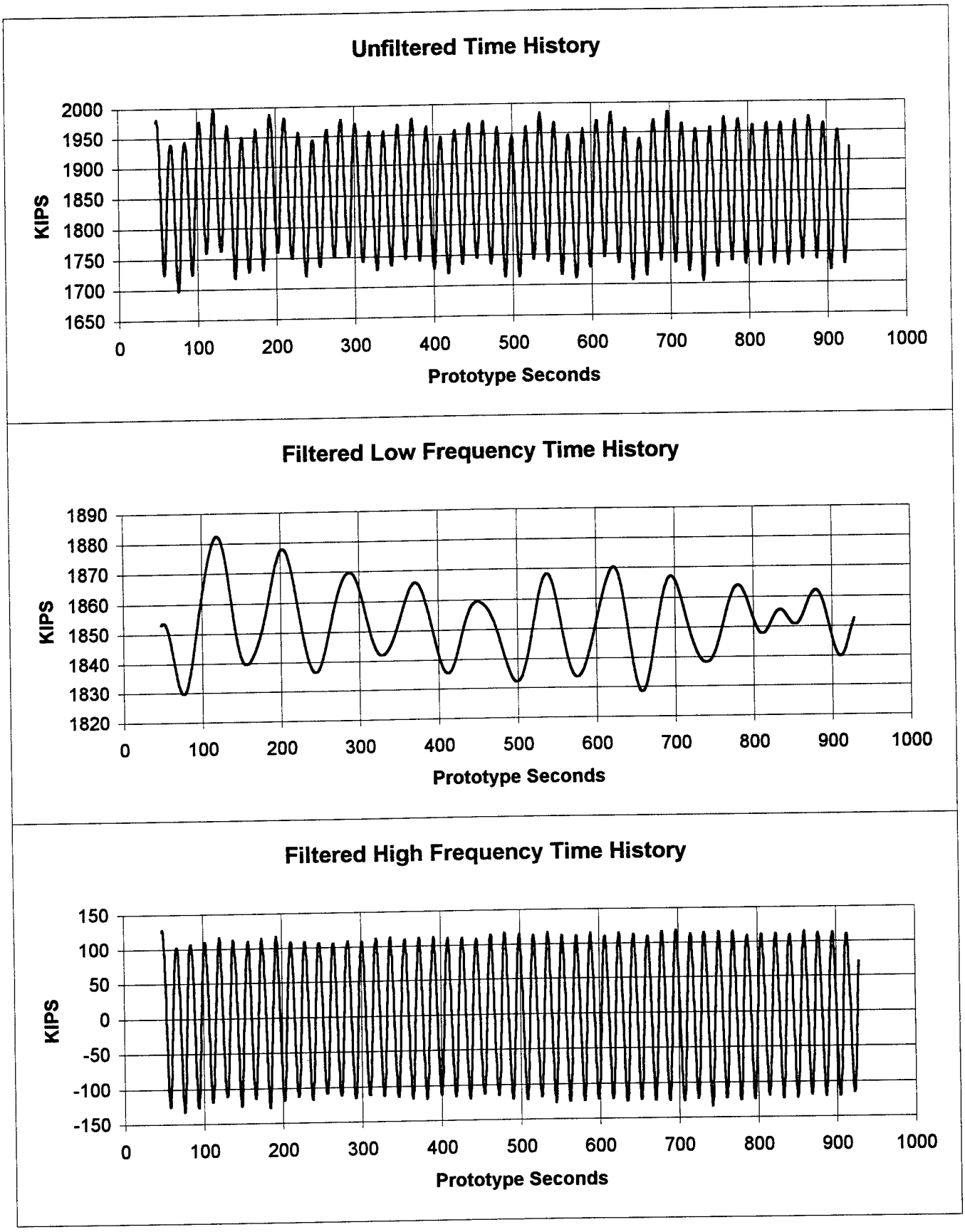
TEST A555 - BUOY 1 TENSION



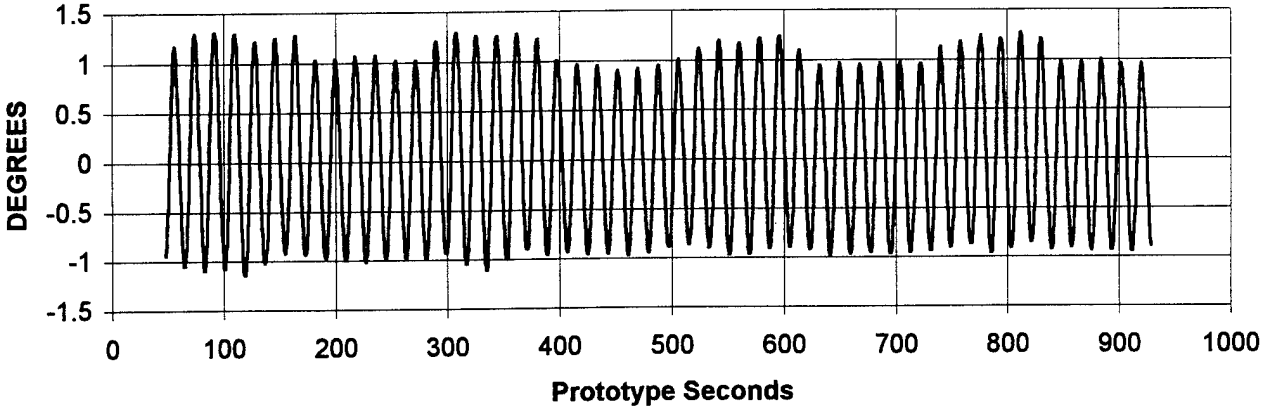



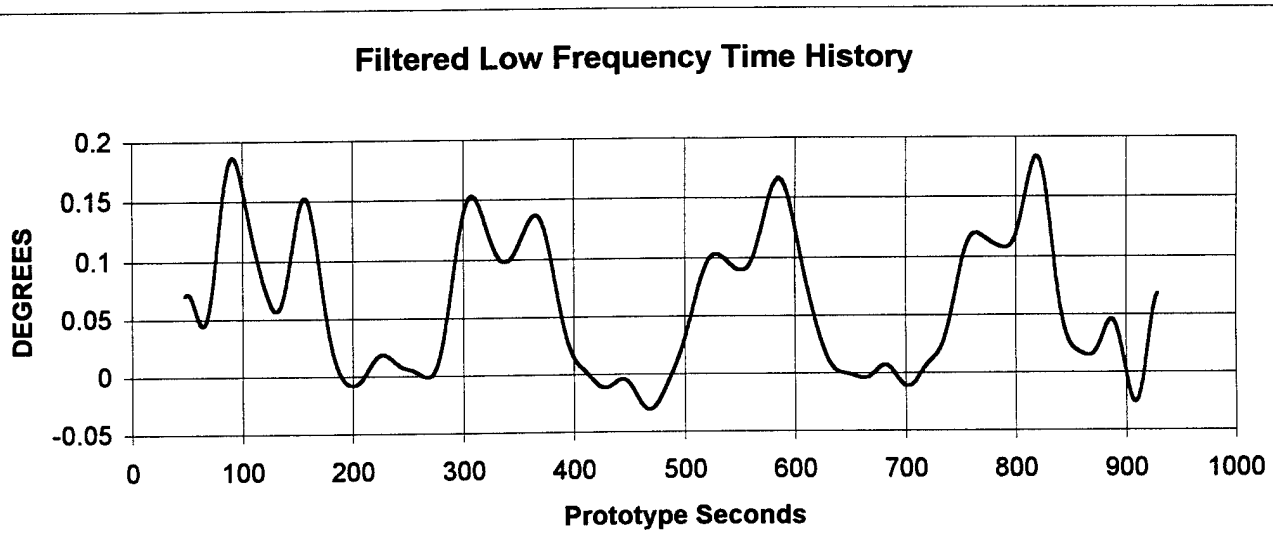



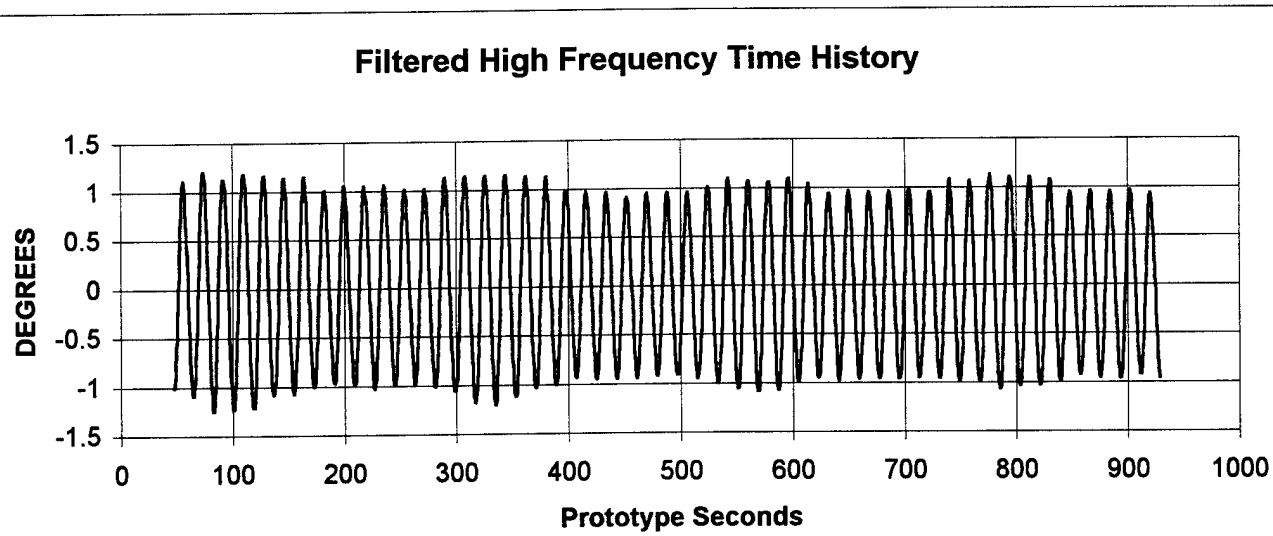
TEST A555 - BUOY 2 TENSION



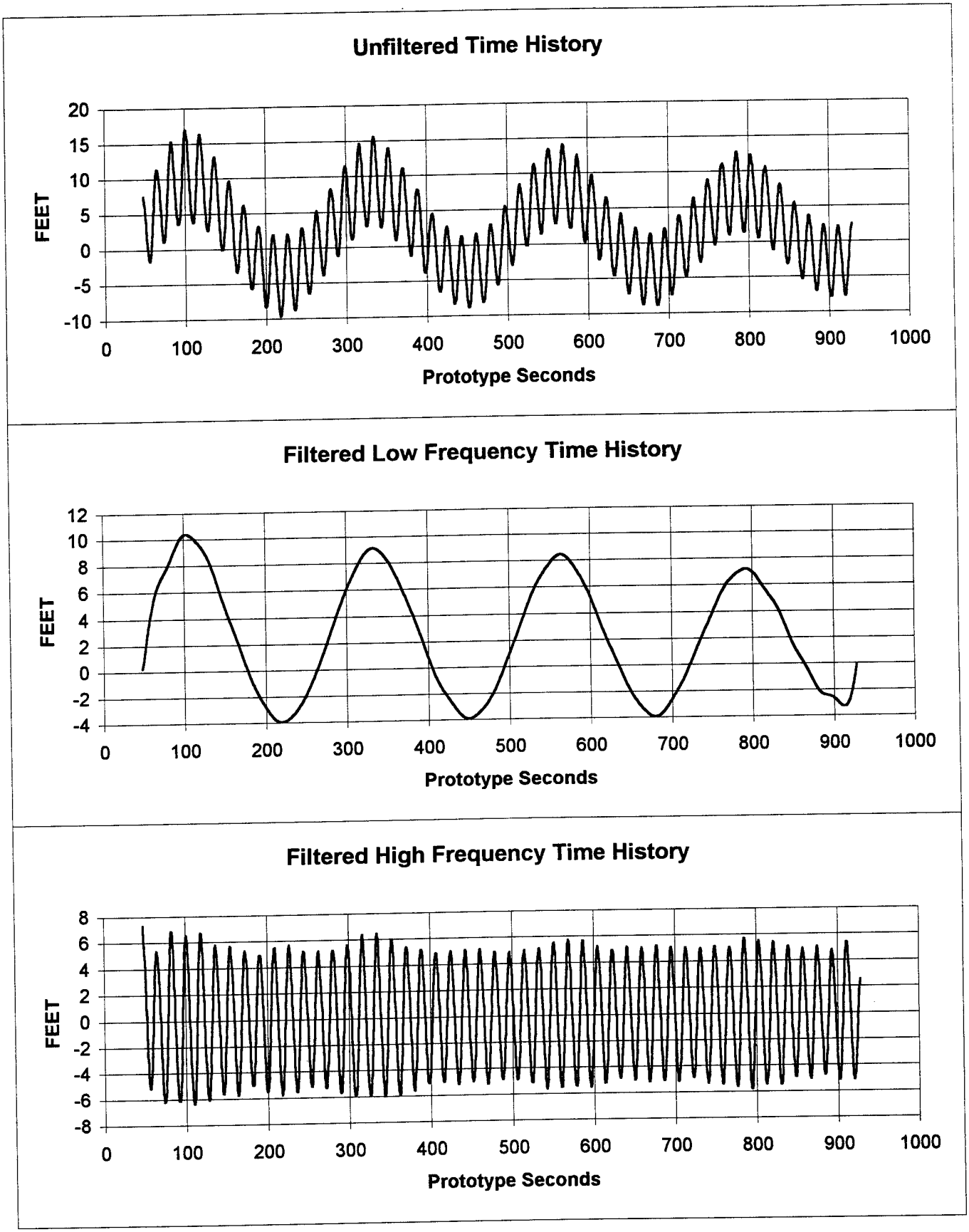
TEST A555 - PITCH



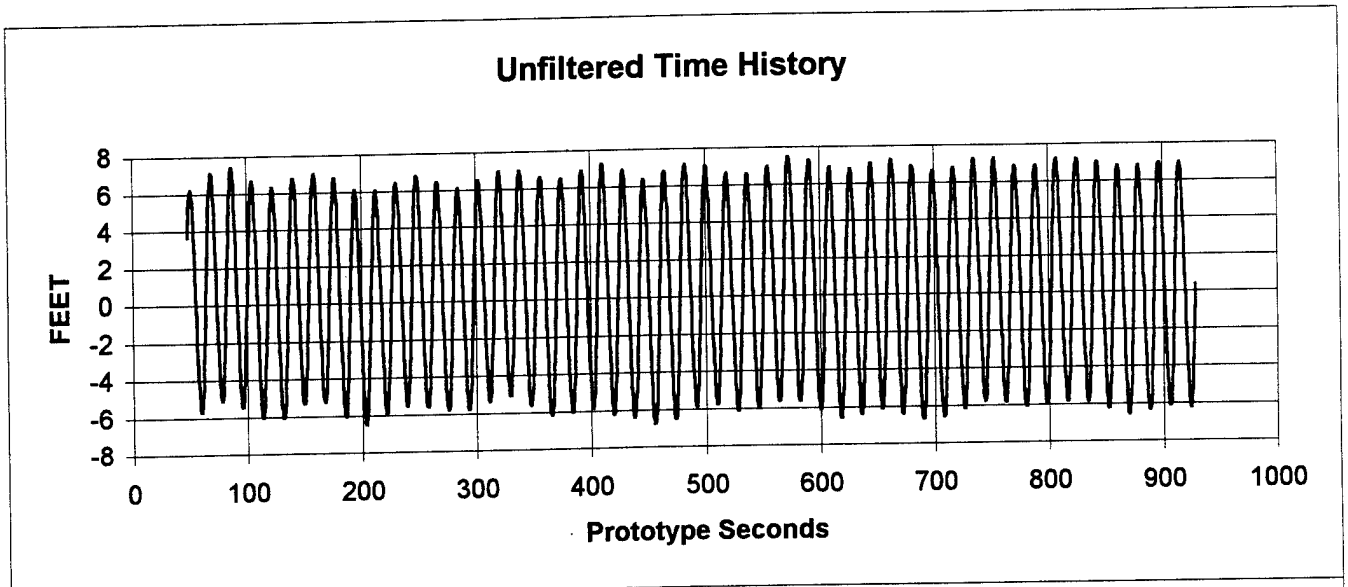



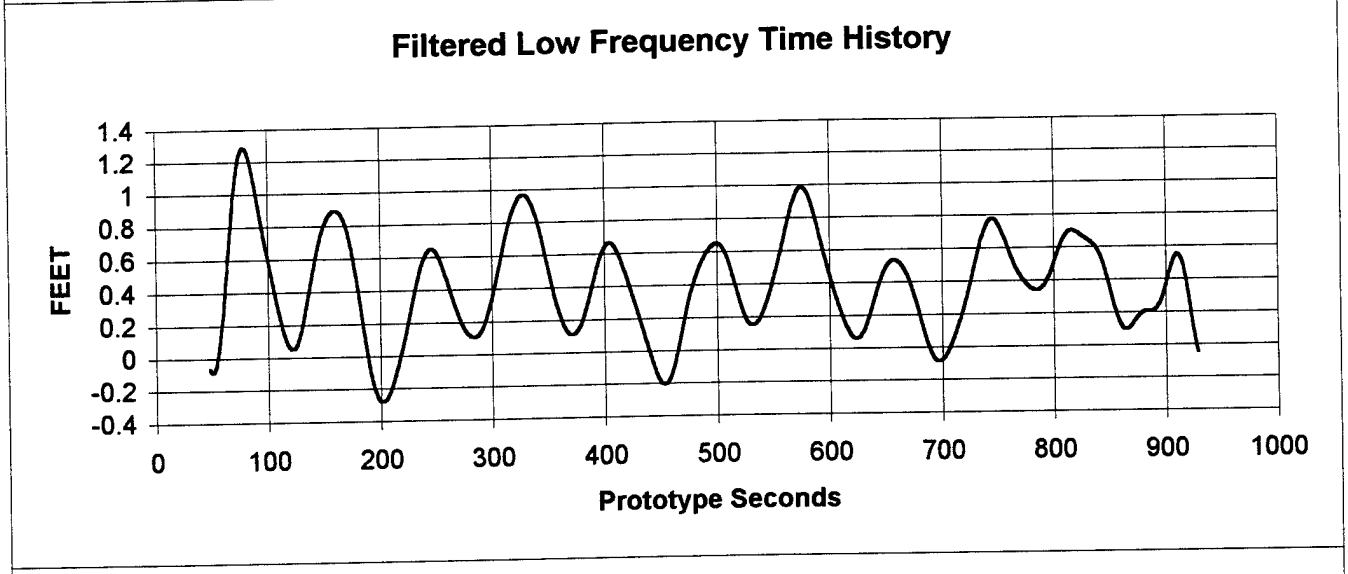



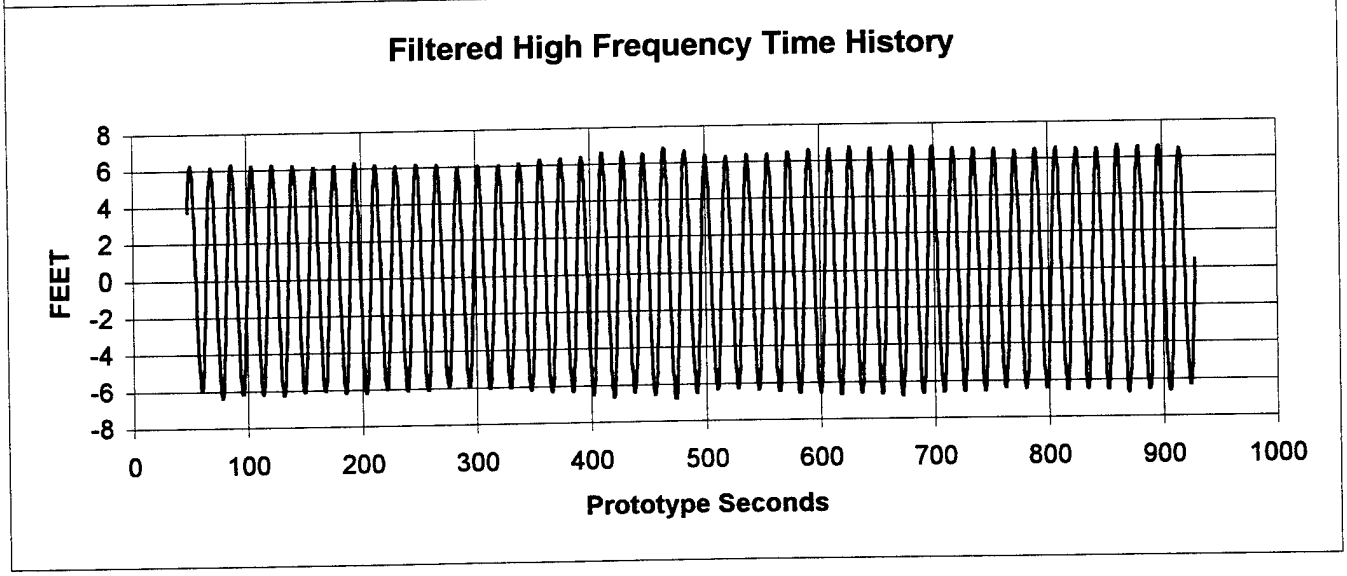
TEST A555 - PT SURGE



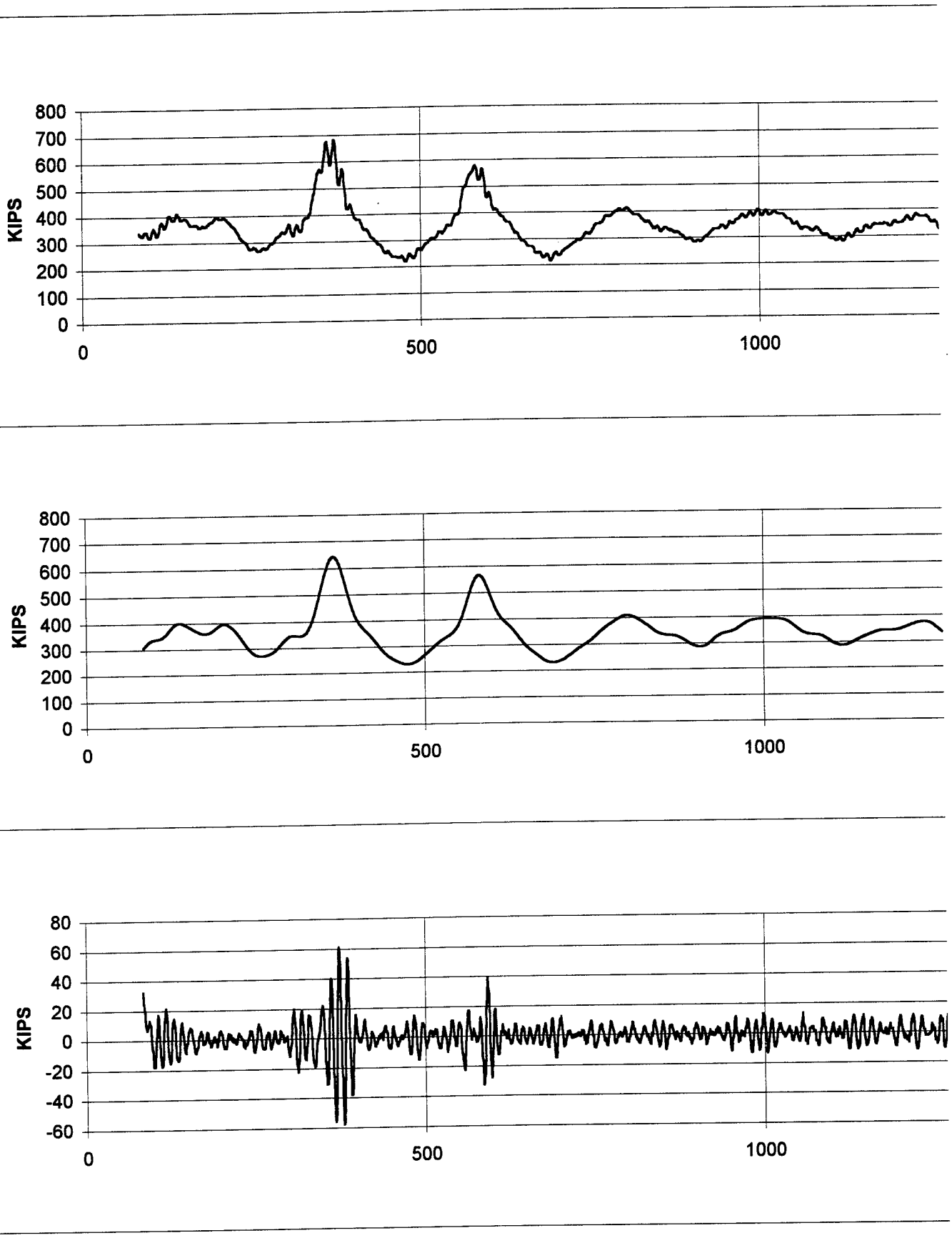
TEST A555 - PT HEAVE



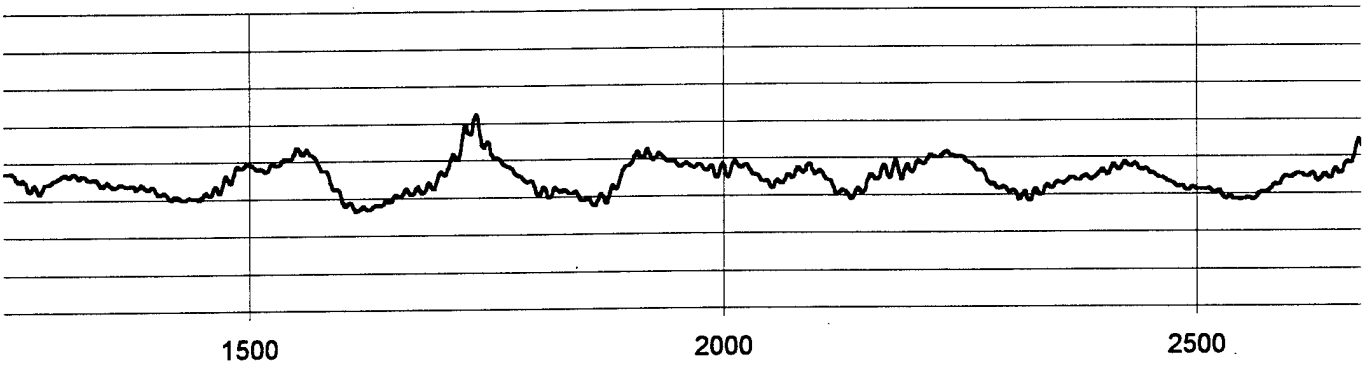



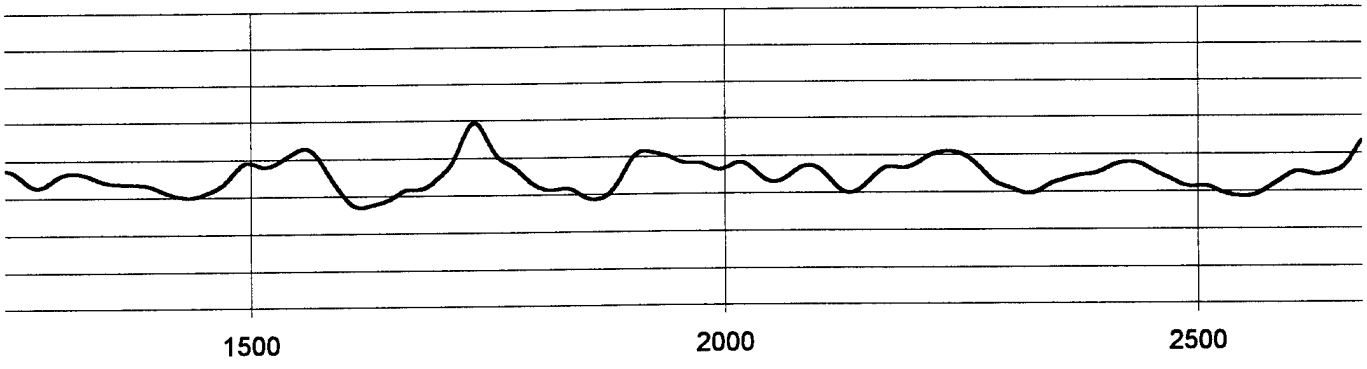
TEST A556B - ML_1



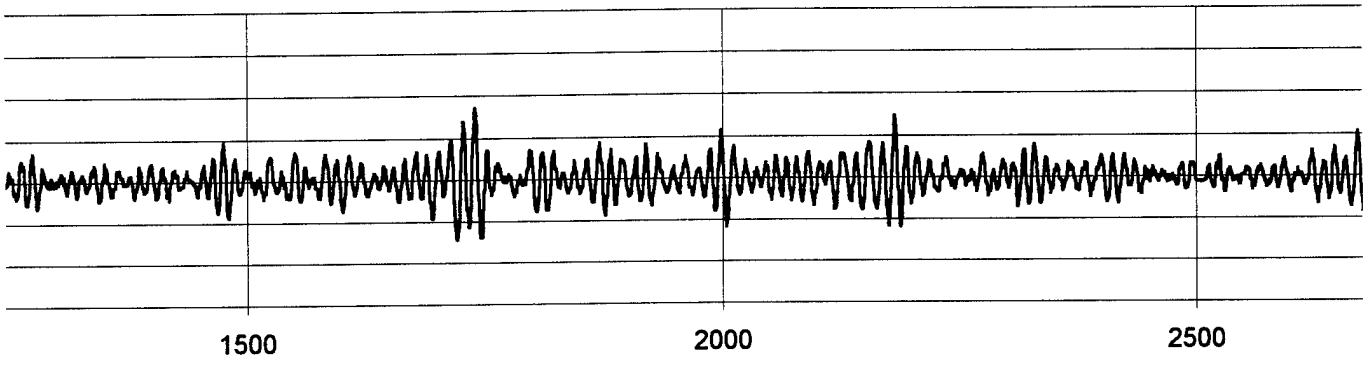
## Unfiltered Time History



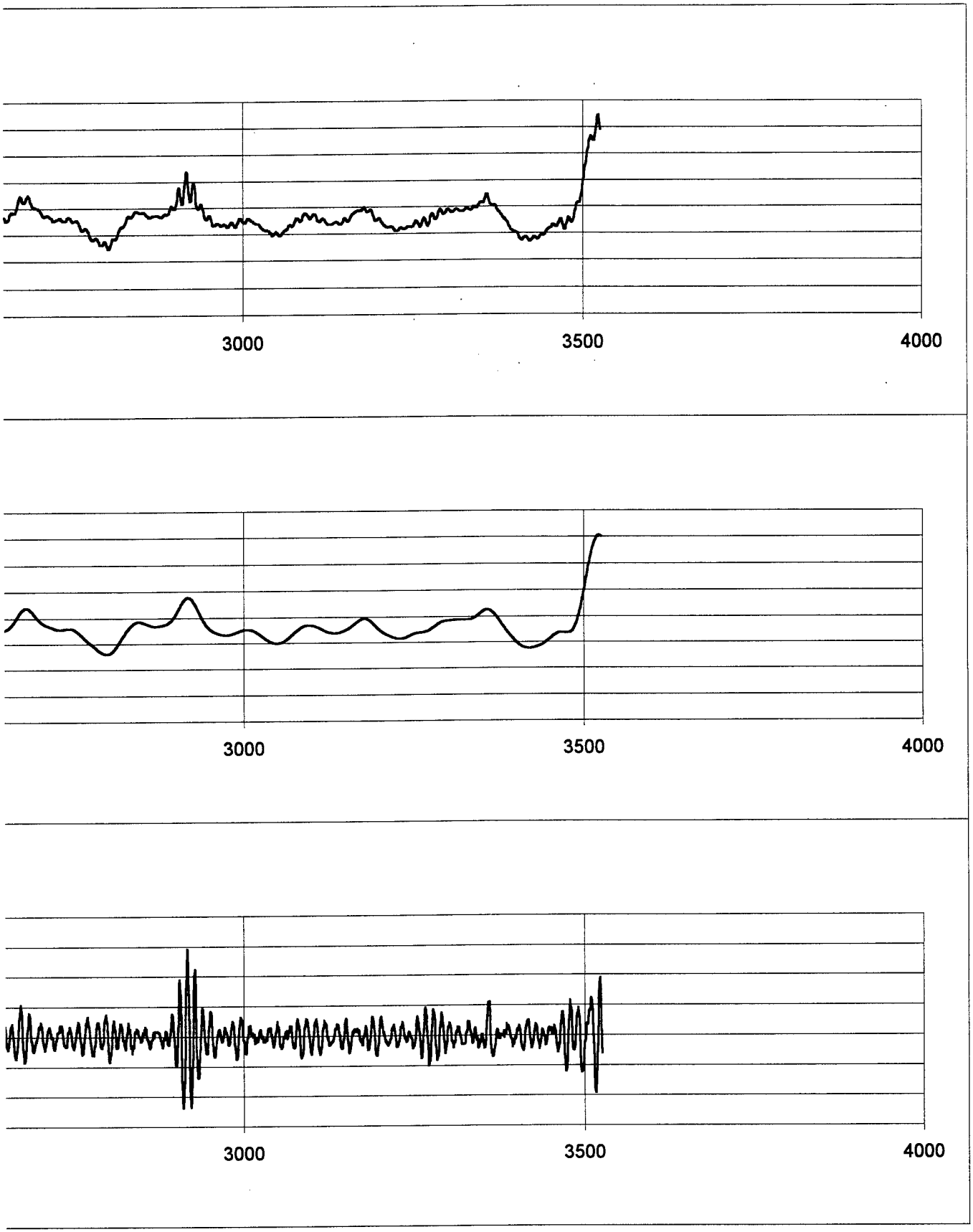

## Filtered Low Frequency Time History



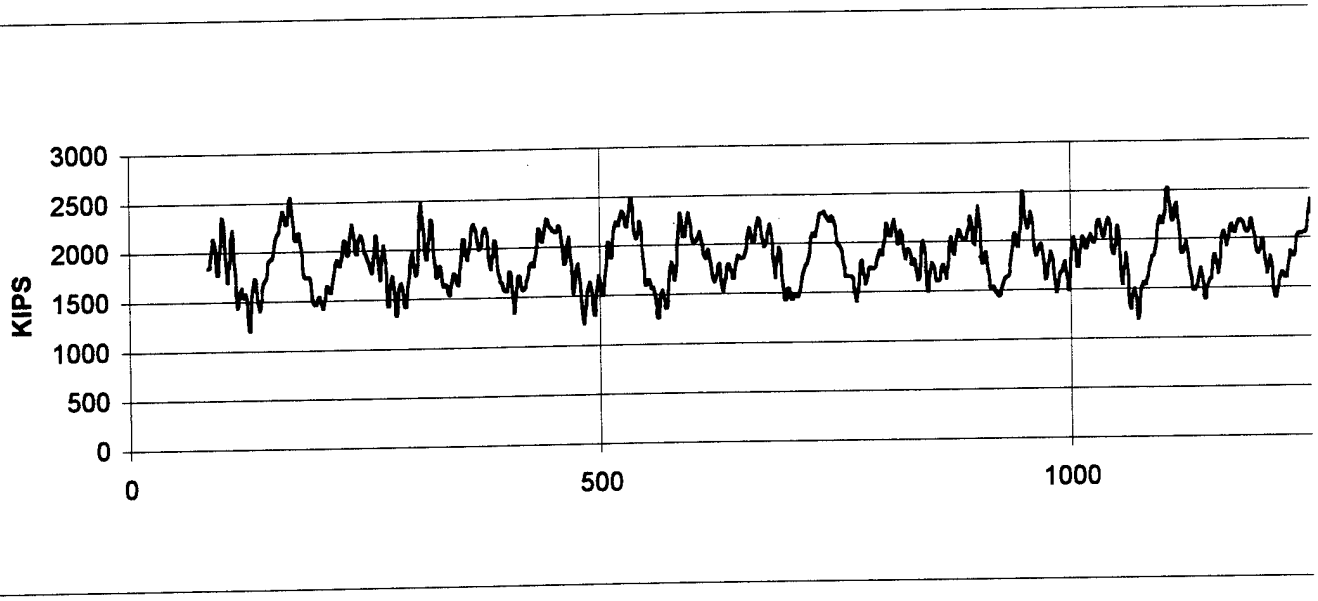

## Filtered High Frequency Time History

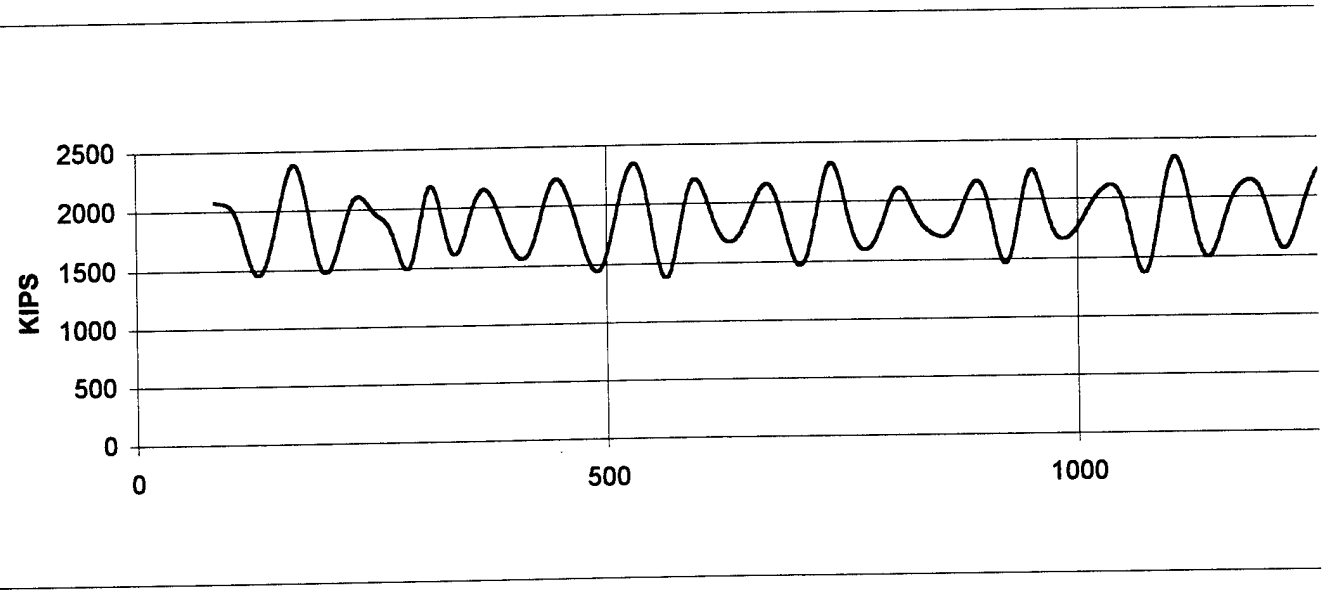


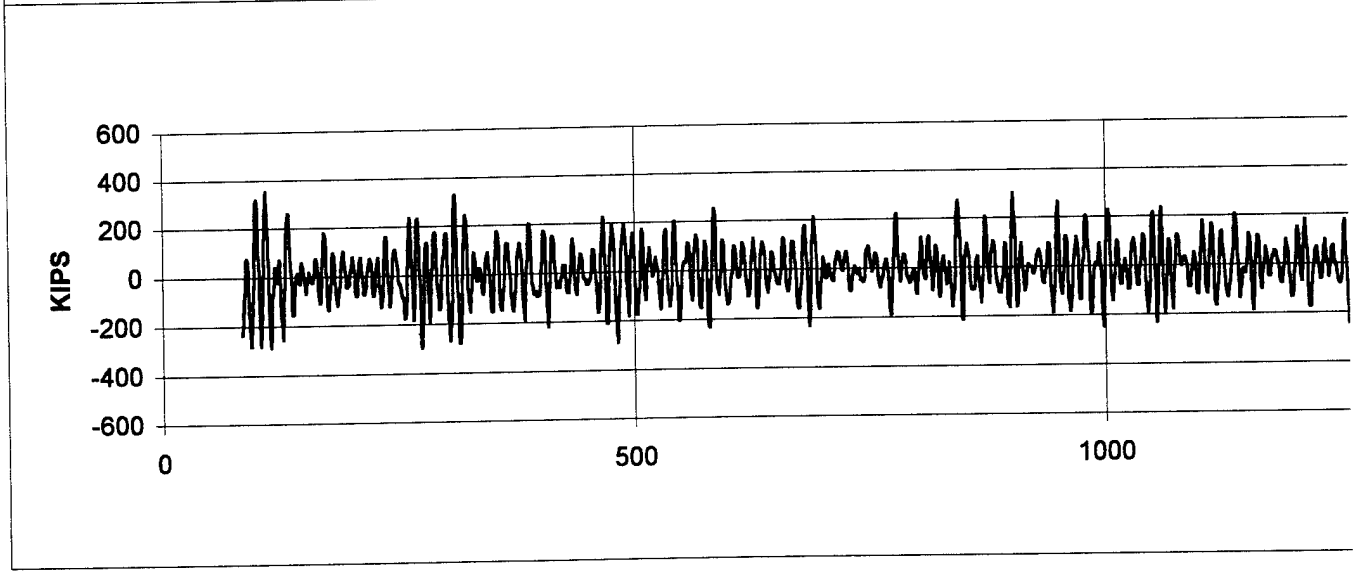
TEST A556B - ML_1



TEST A556B - BUOY 1 TENSION

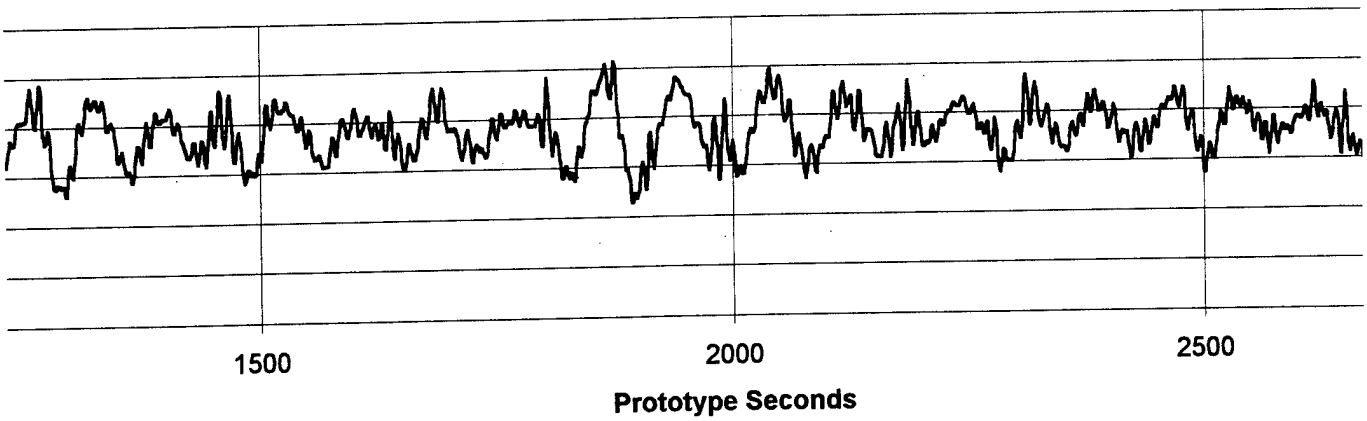


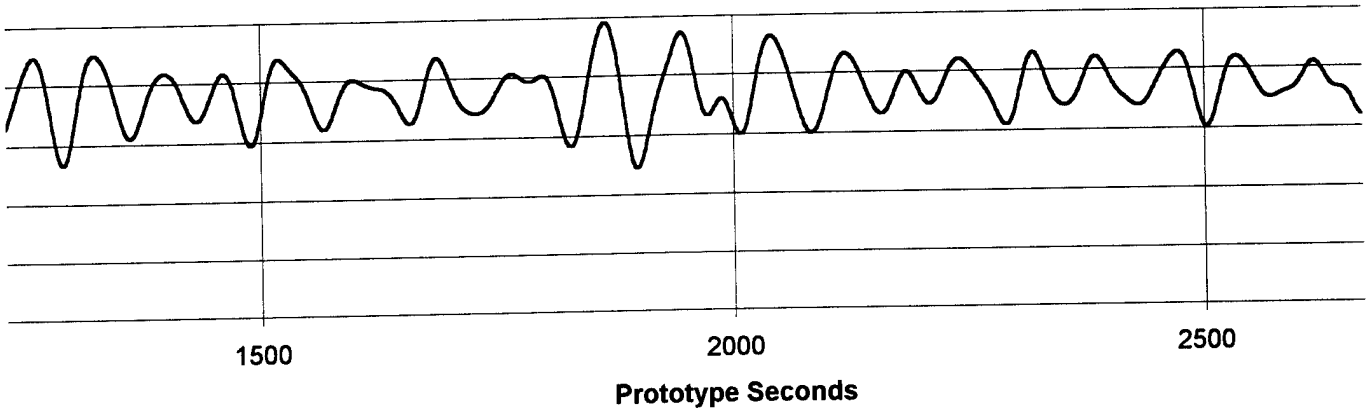



TEST A556B - BUOY 1 TENSION

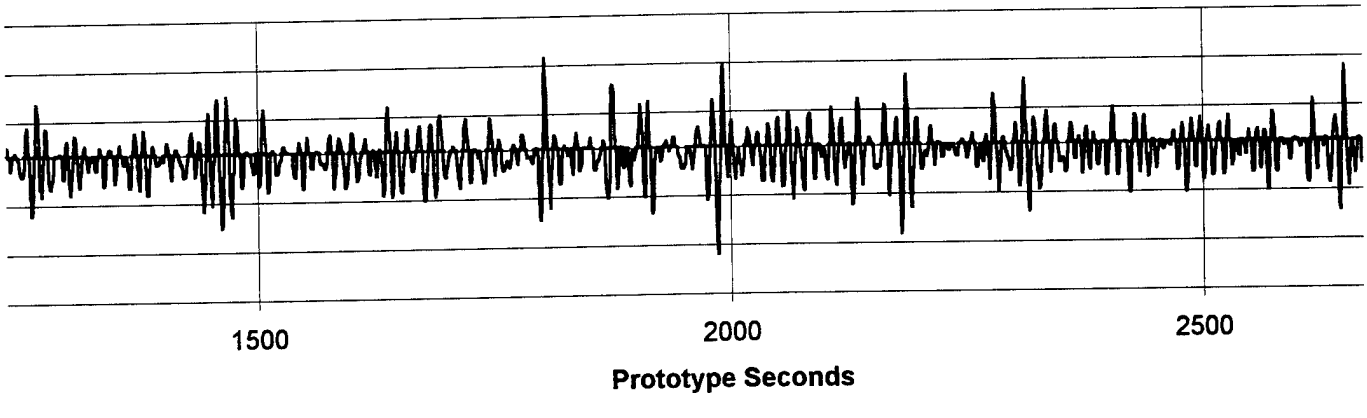
## Unfiltered Time History



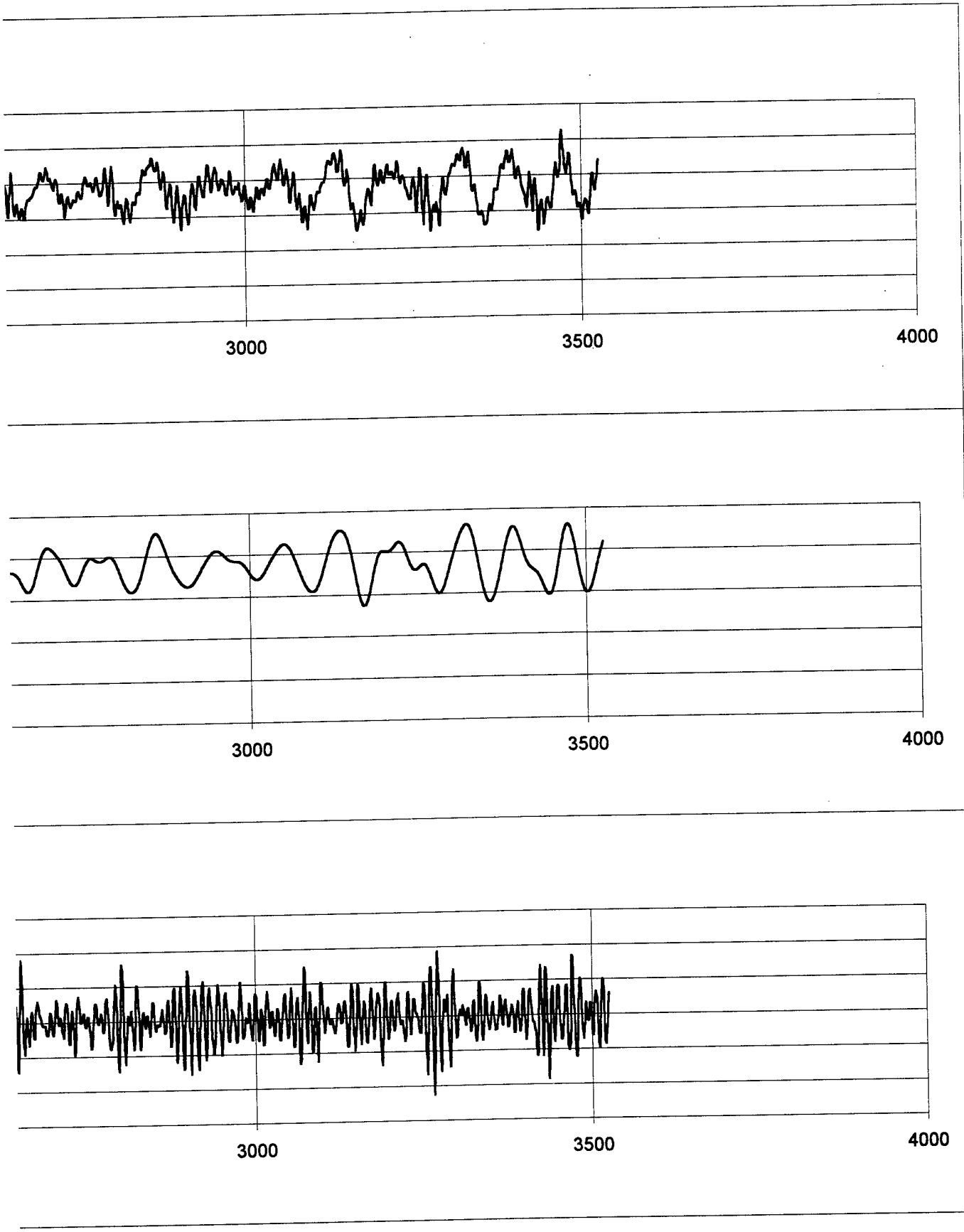

## Filtered Low Frequency Time History



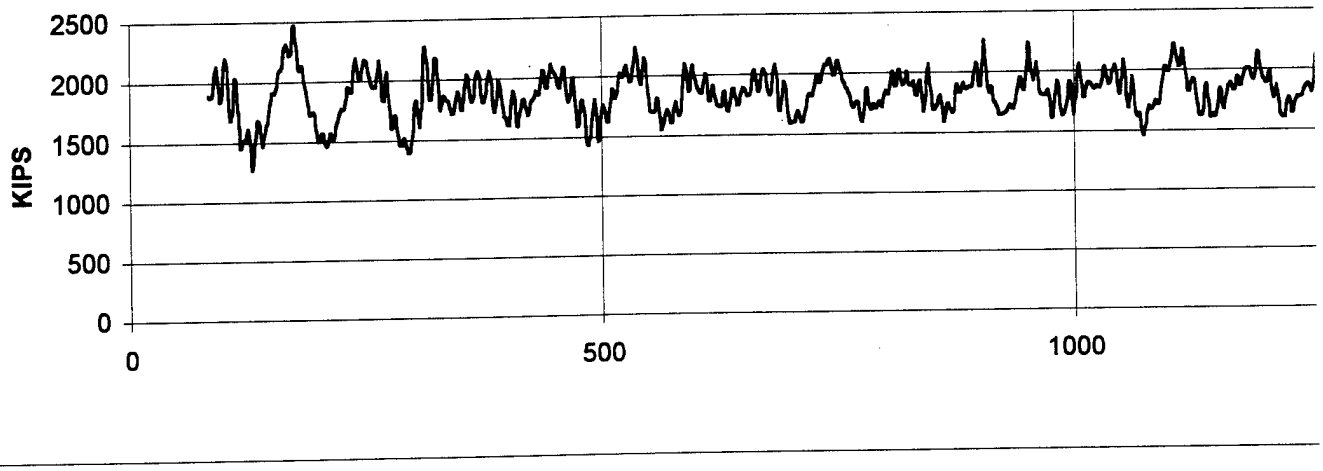

## Filtered High Frequency Time History

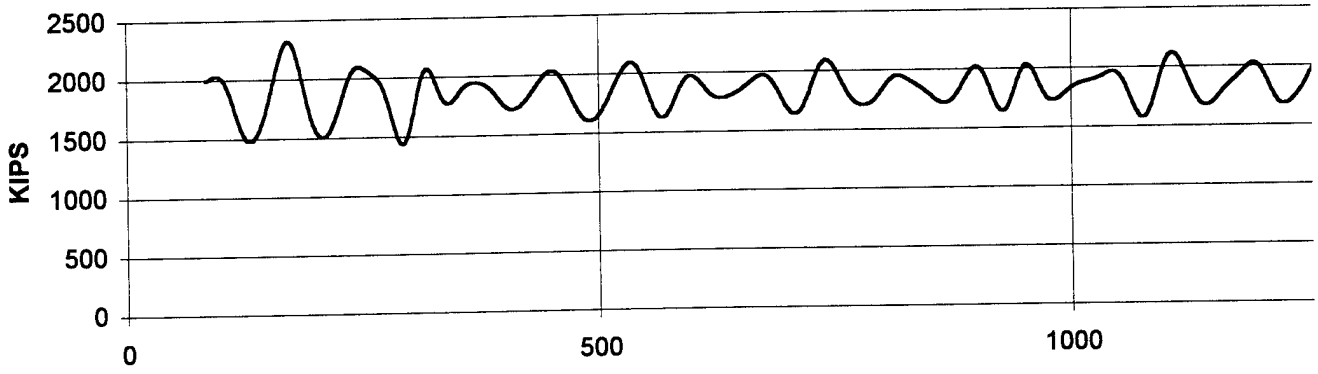


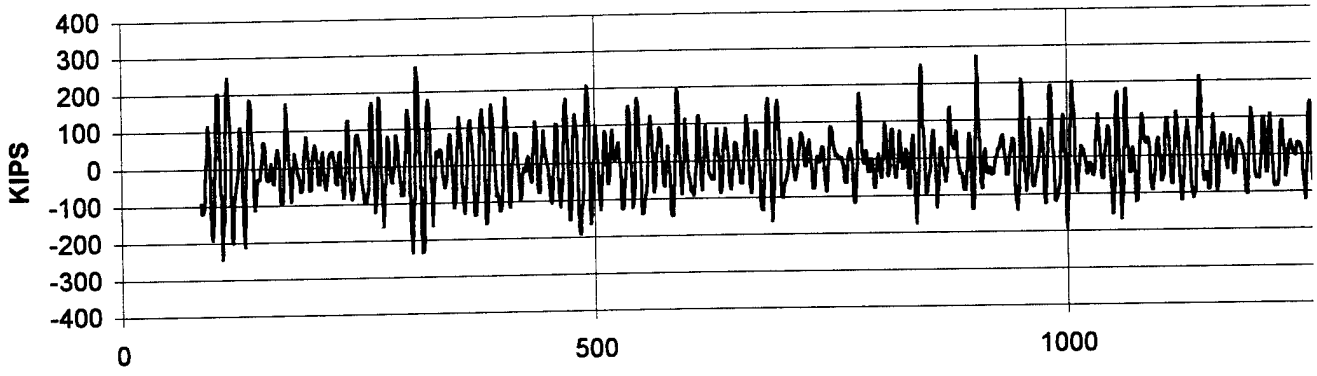
TEST A556B - BUOY 1 TENSION



TEST A556B - BUOY 2 TENSION

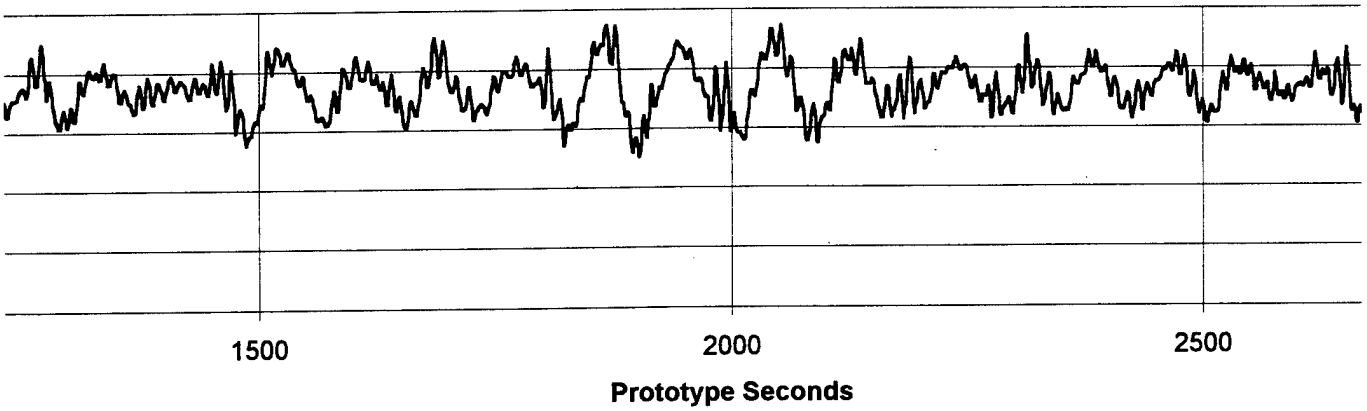


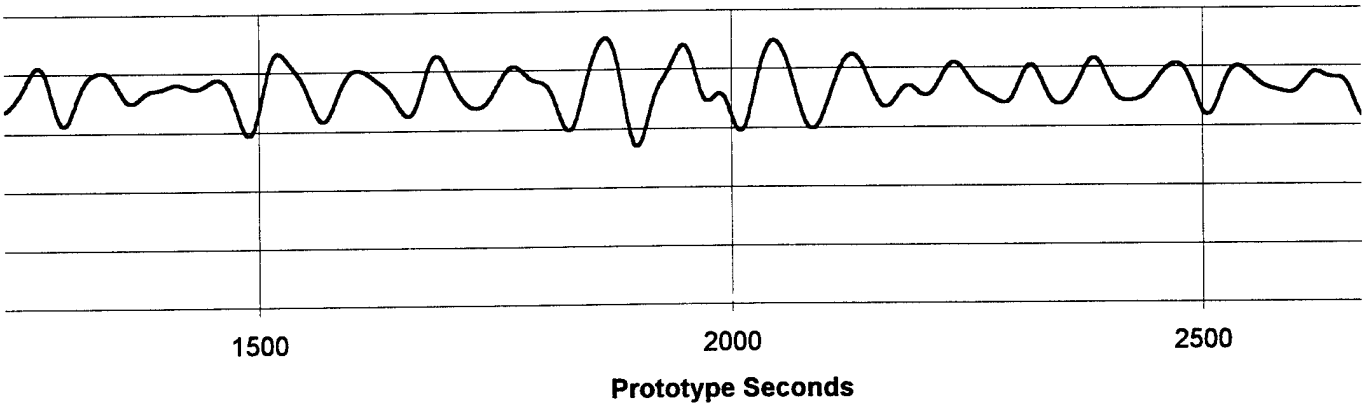



TEST A556B - BUOY 2 TENSION

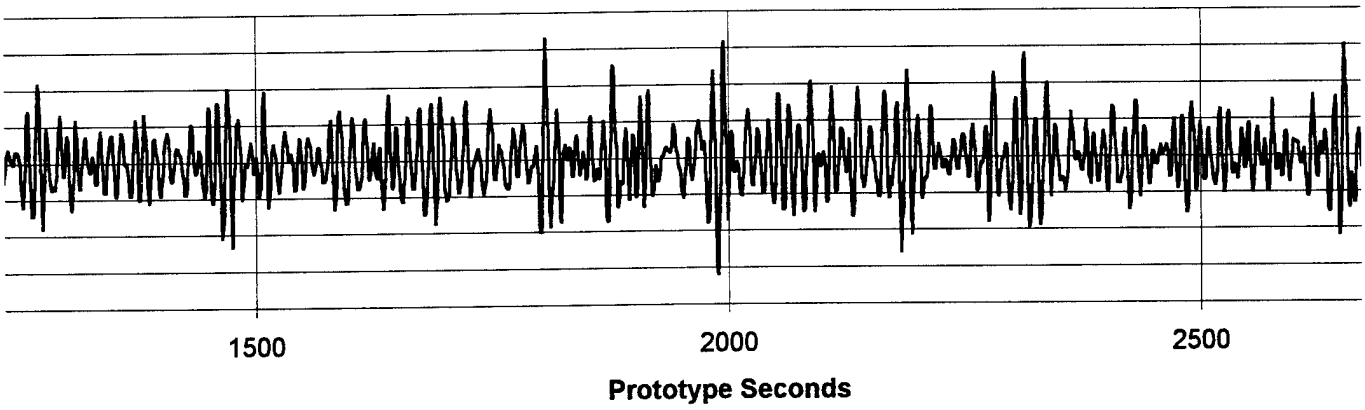
## Unfiltered Time History



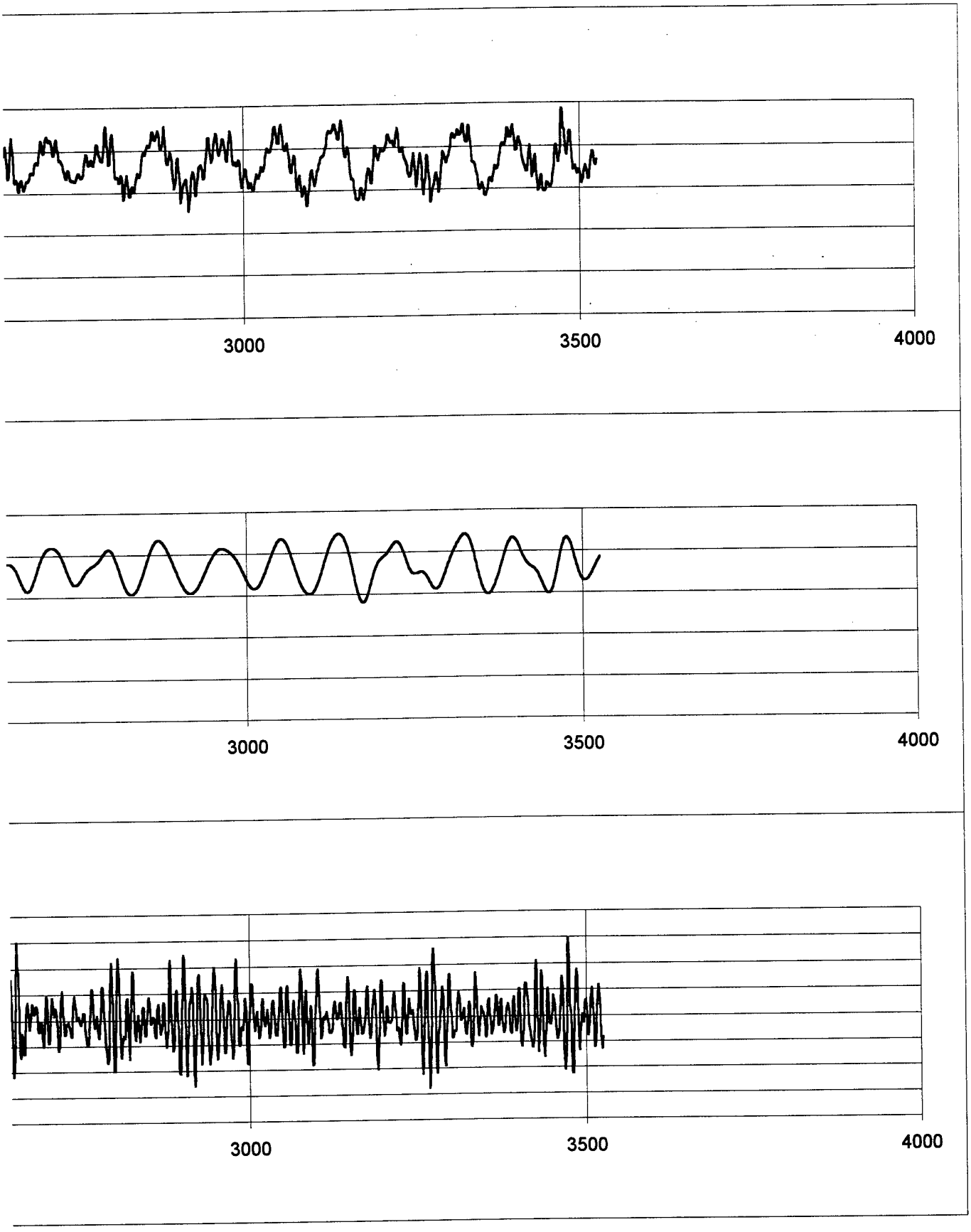

## Filtered Low Frequency Time History



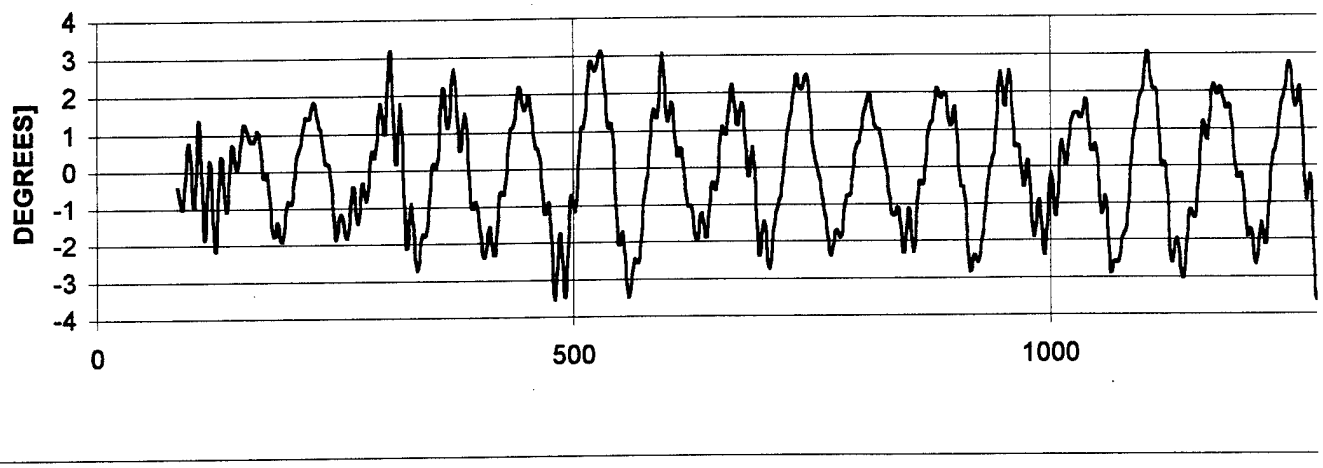

## Filtered High Frequency Time History

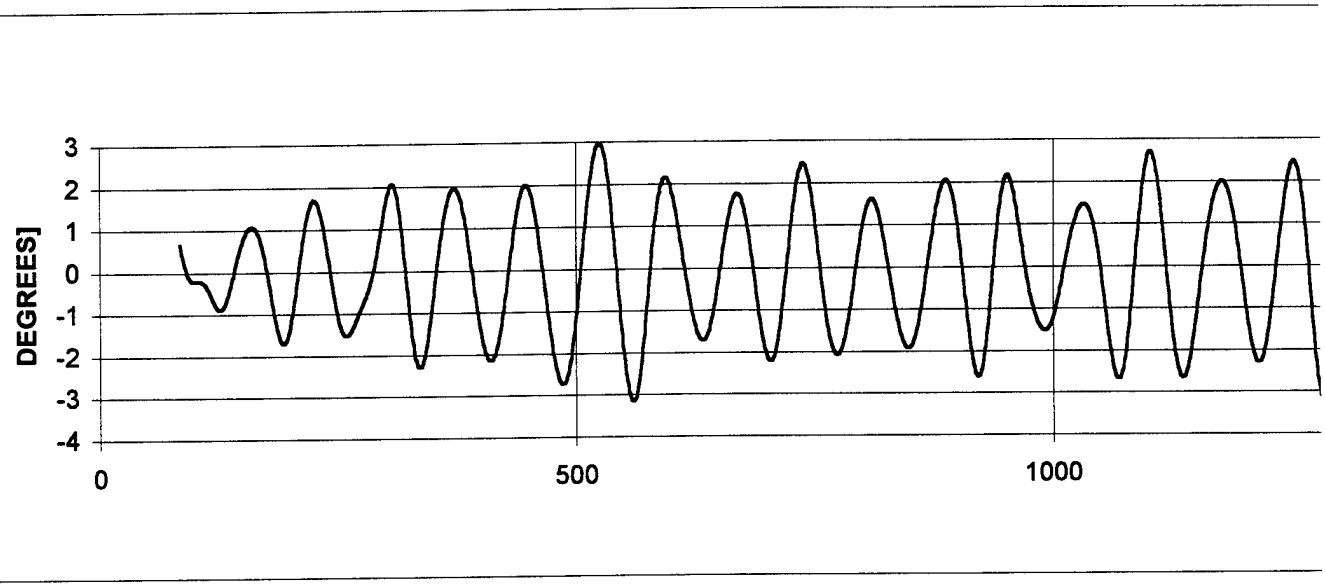


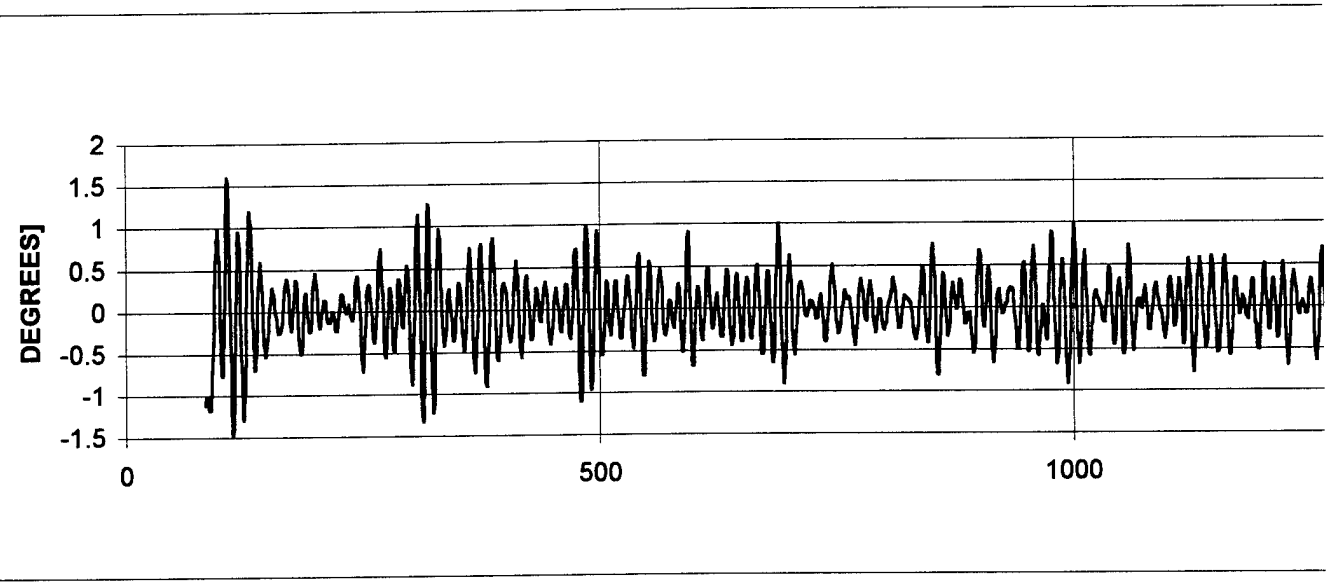
TEST A556B - BUOY 2 TENSION



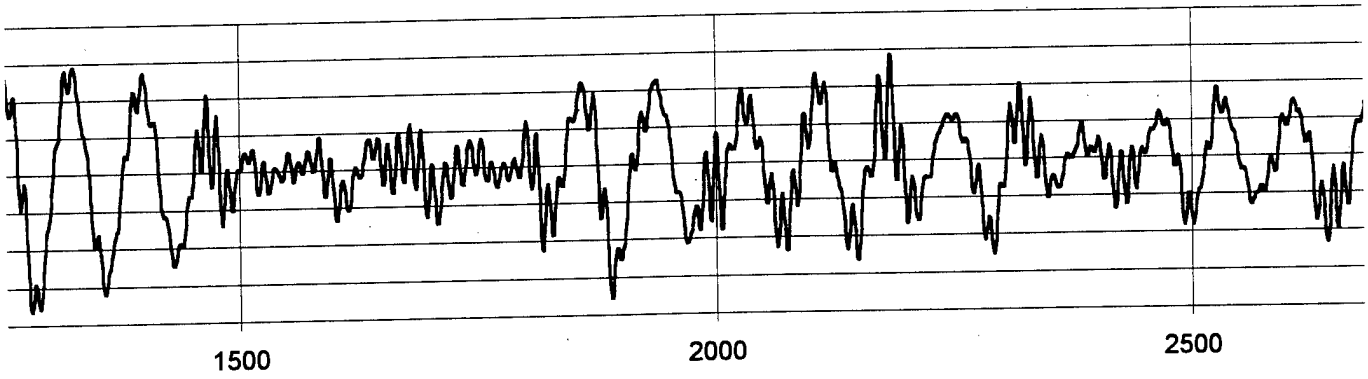
TEST A556B - PITCH



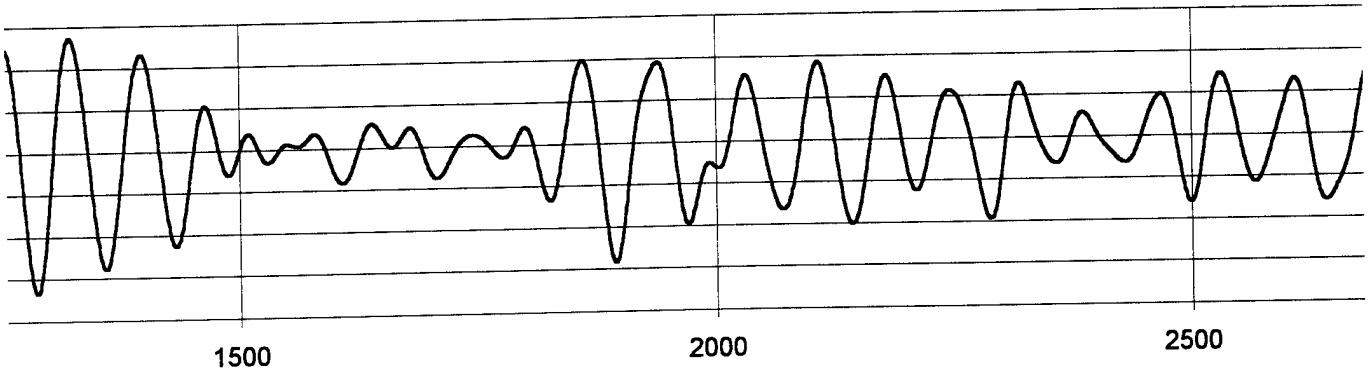



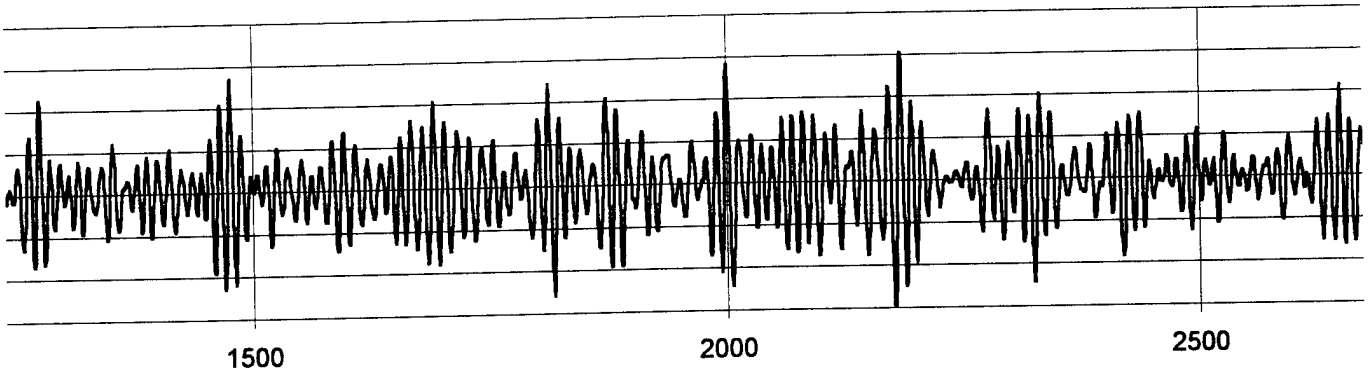
## Unfiltered Time History



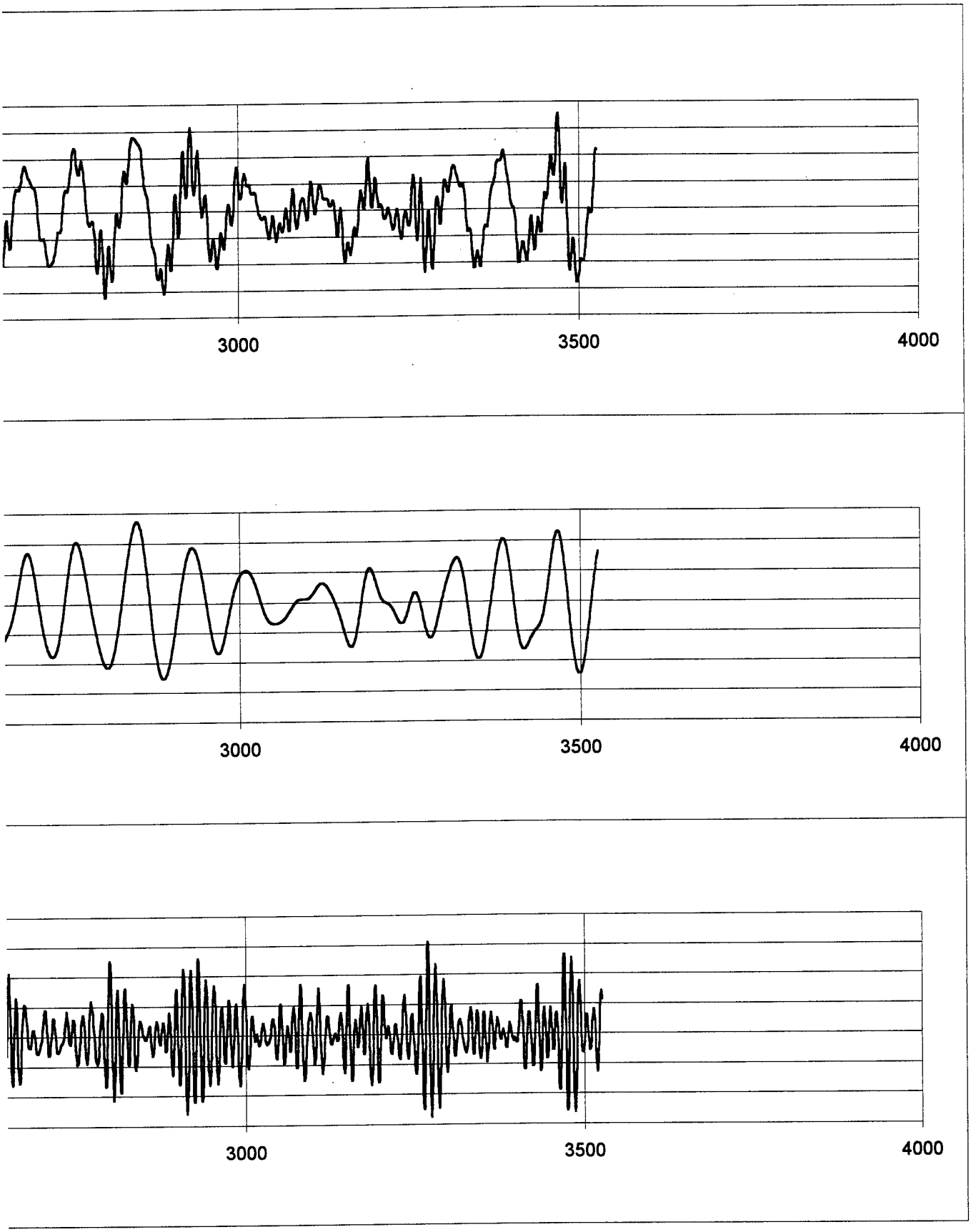

## Filtered Low Frequency Time History



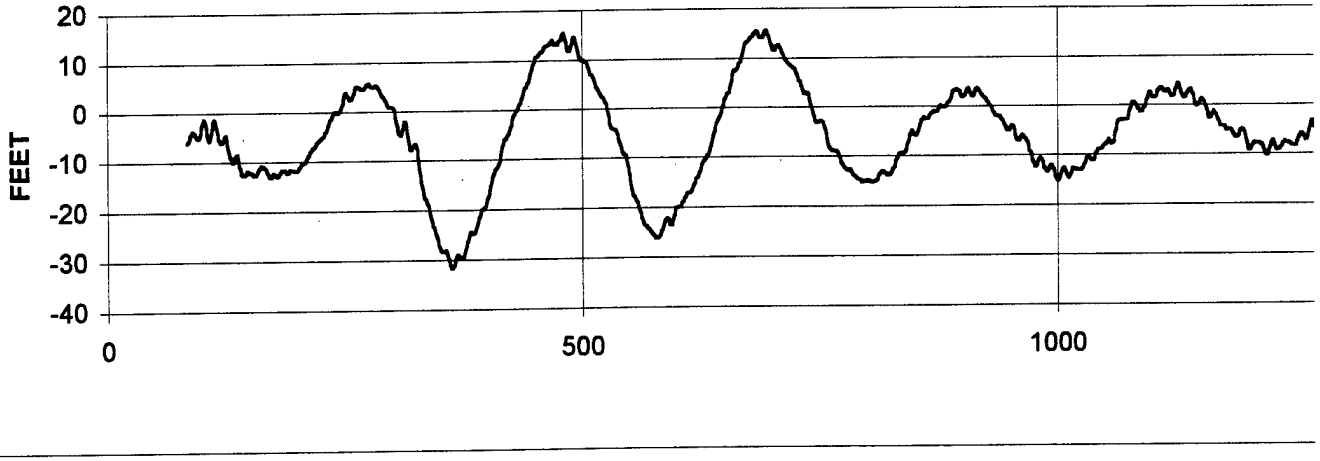

## Filtered High Frequency Time History

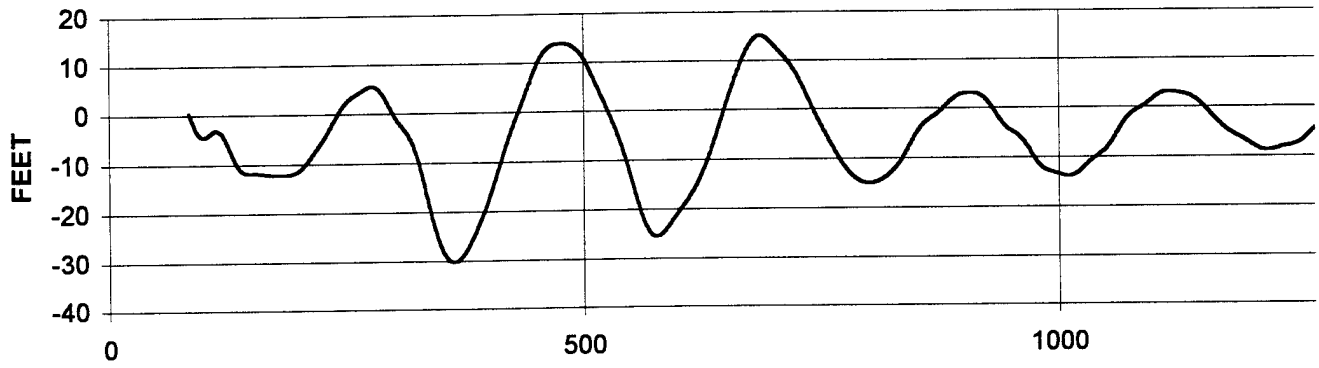


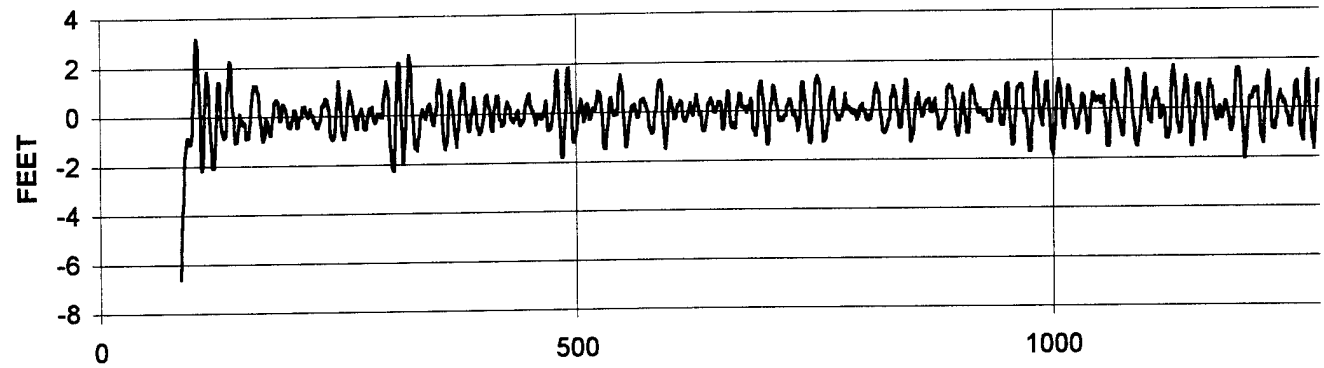
TEST A556B - PITCH



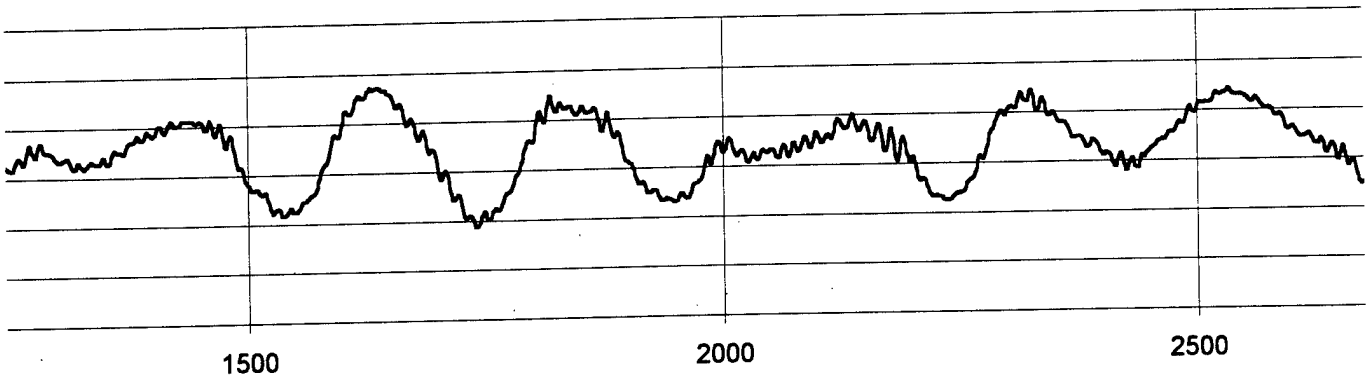
TEST A556B - PT SURGE



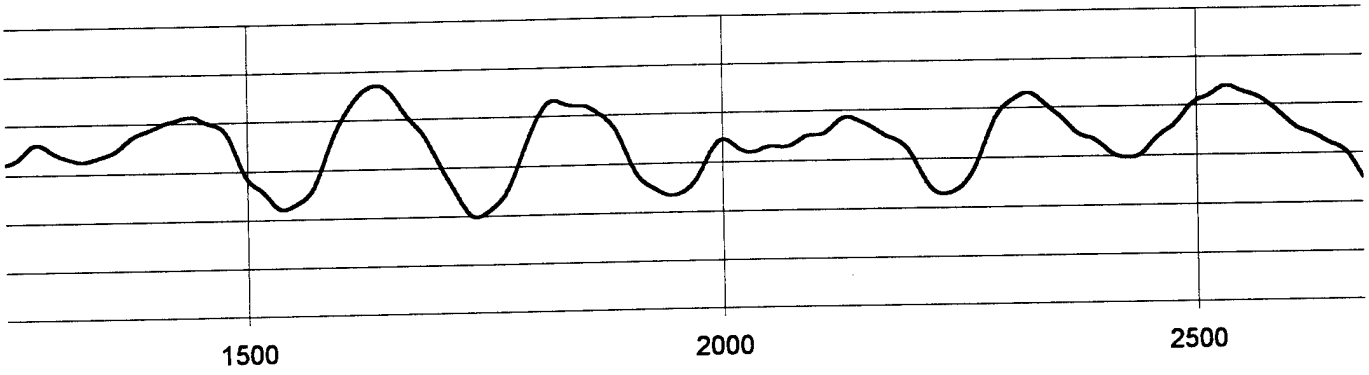



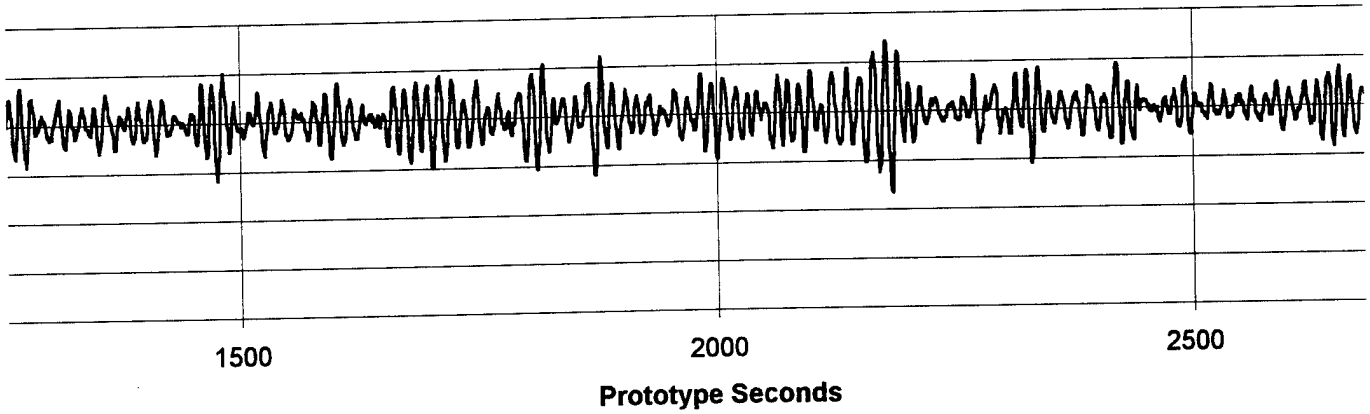
## Unfiltered Time History



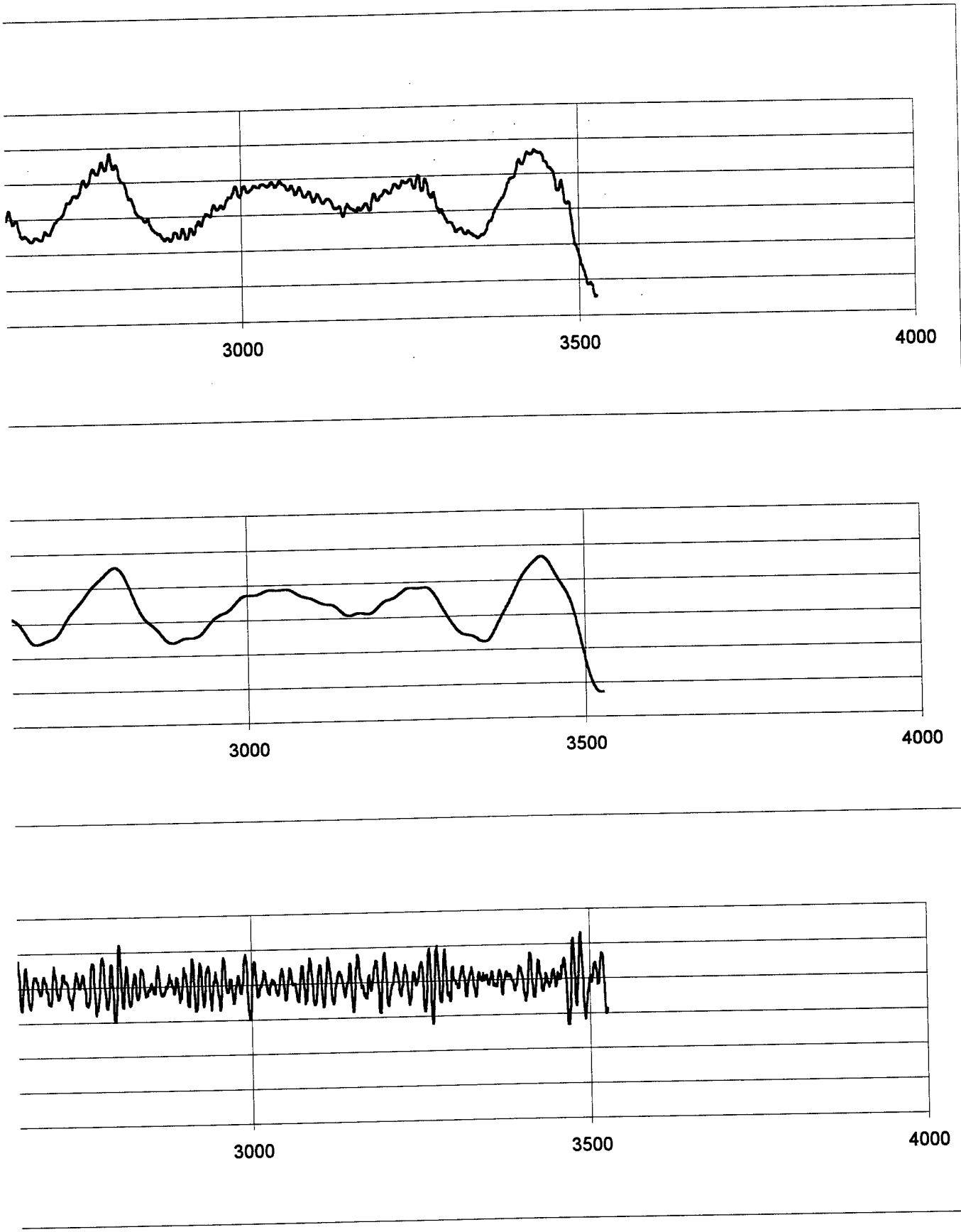

## Filtered Low Frequency Time History



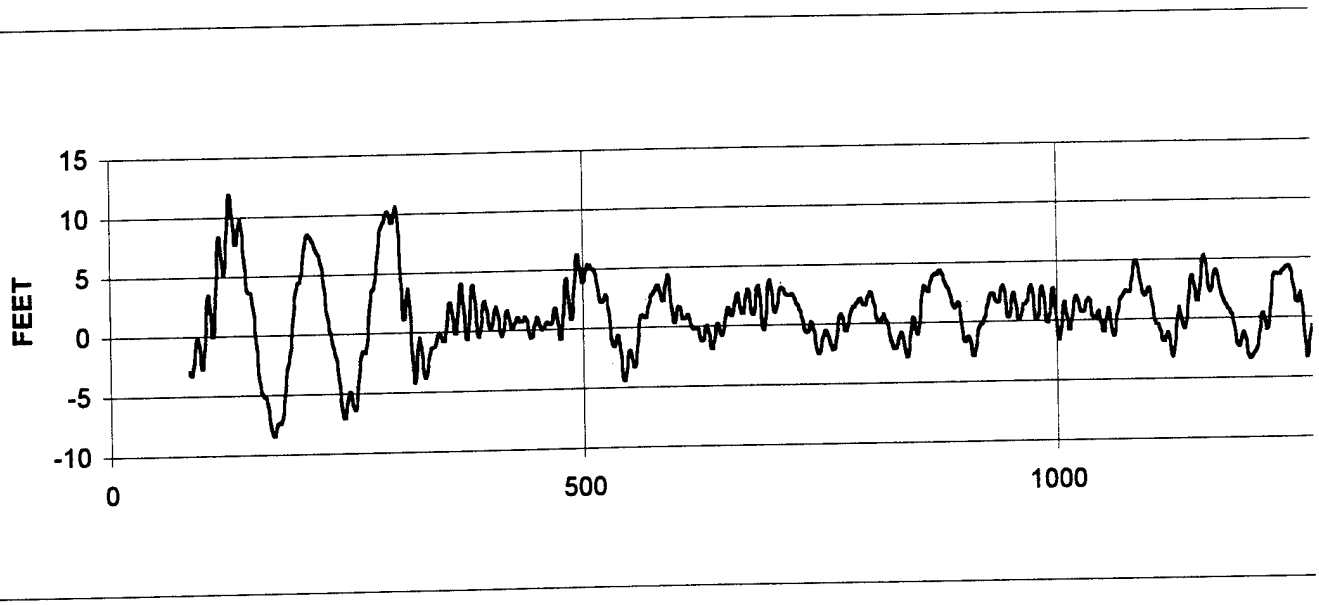

## Filtered High Frequency Time History

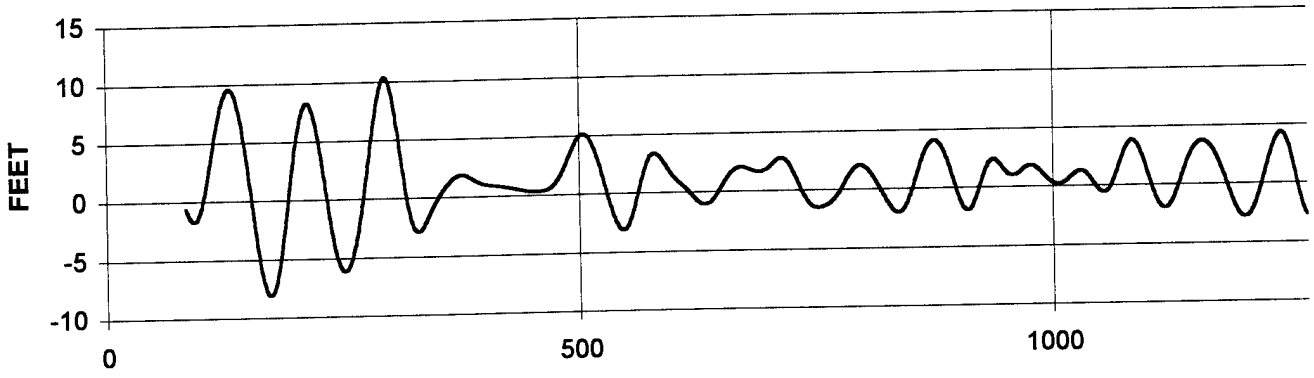


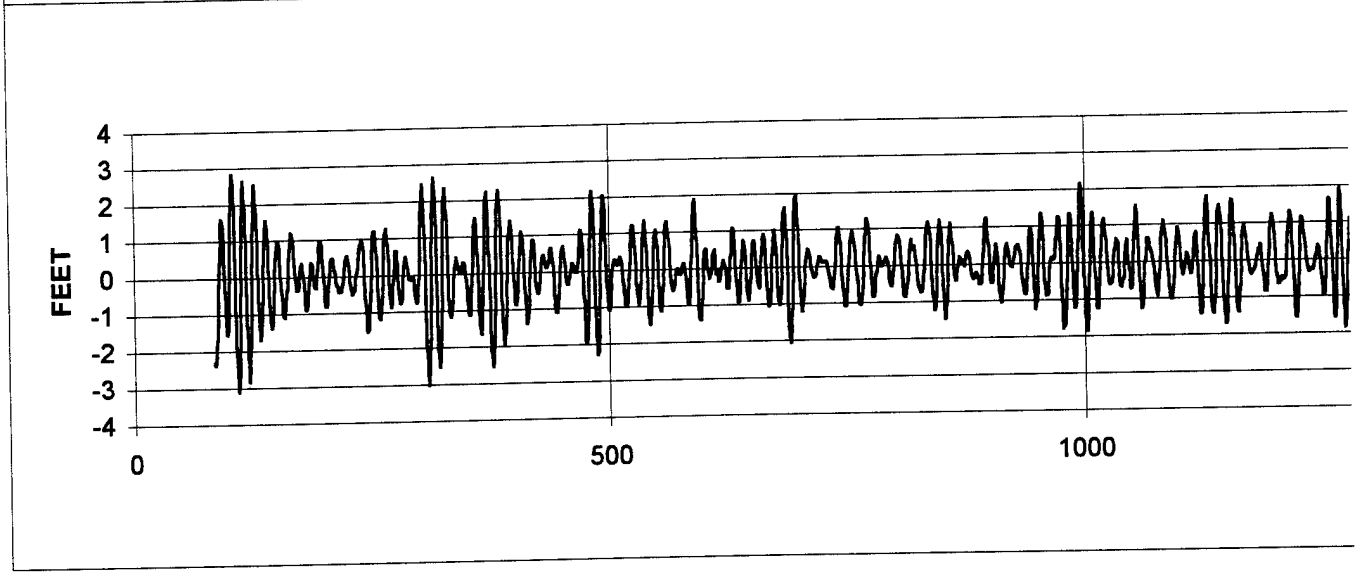
TEST A556B - PT SURGE



TEST A556B - PT HEAVE

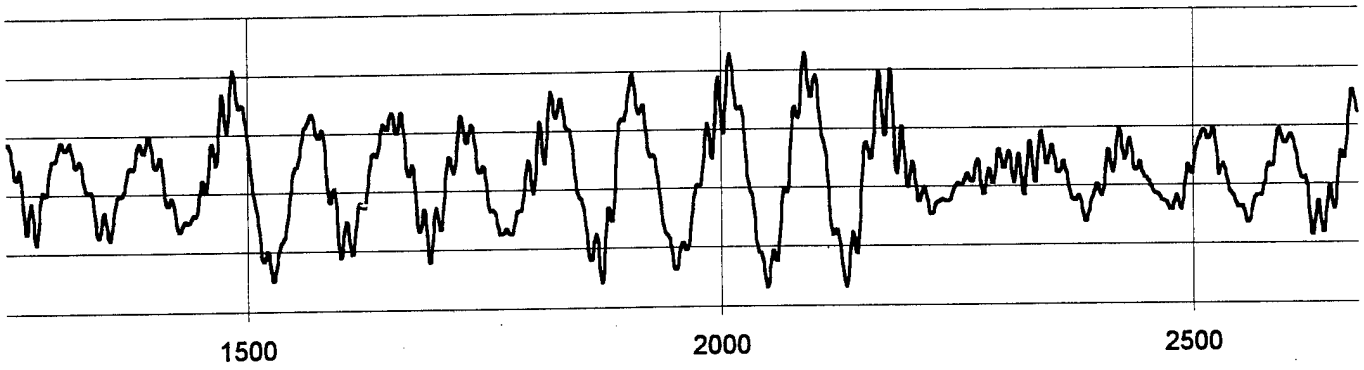


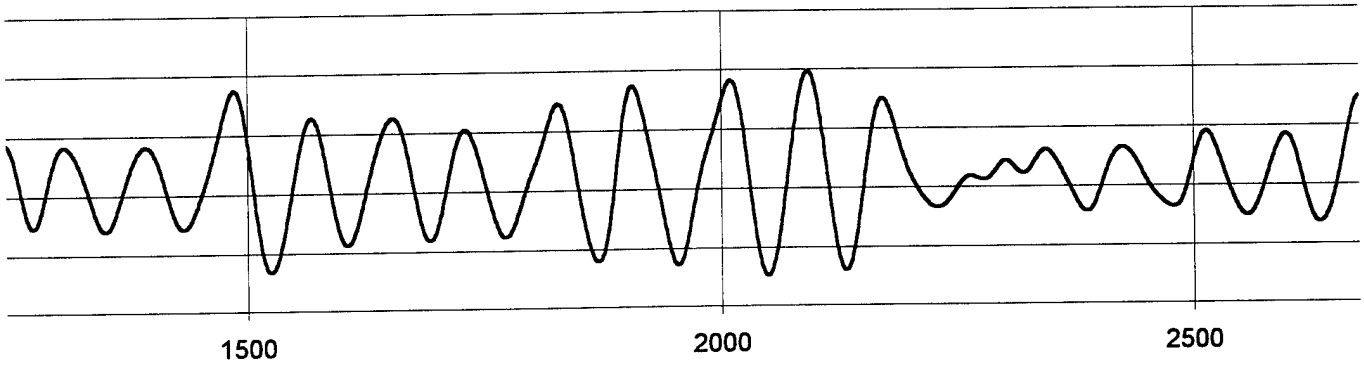



TEST A556B - PT HEAVE

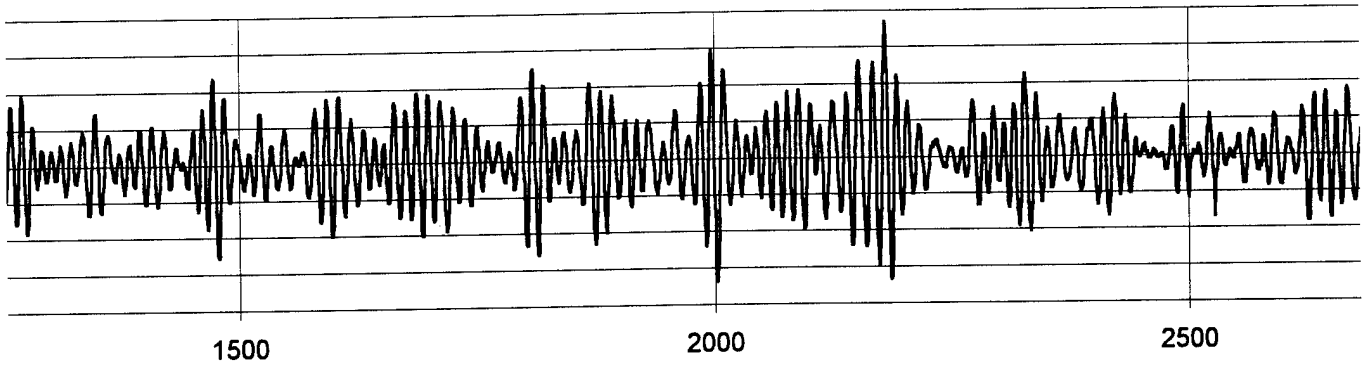
## Unfiltered Time History



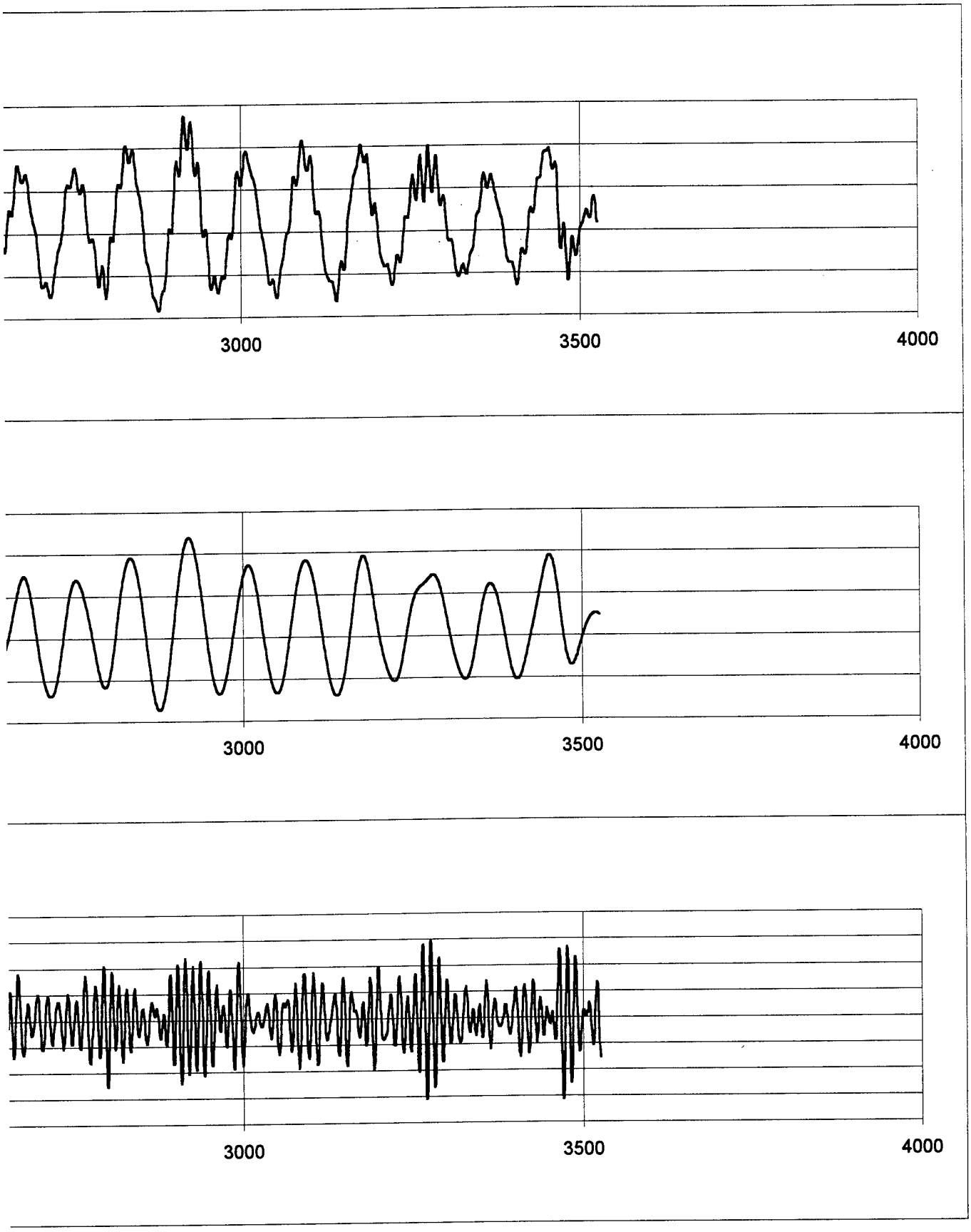

## Filtered Low Frequency Time History



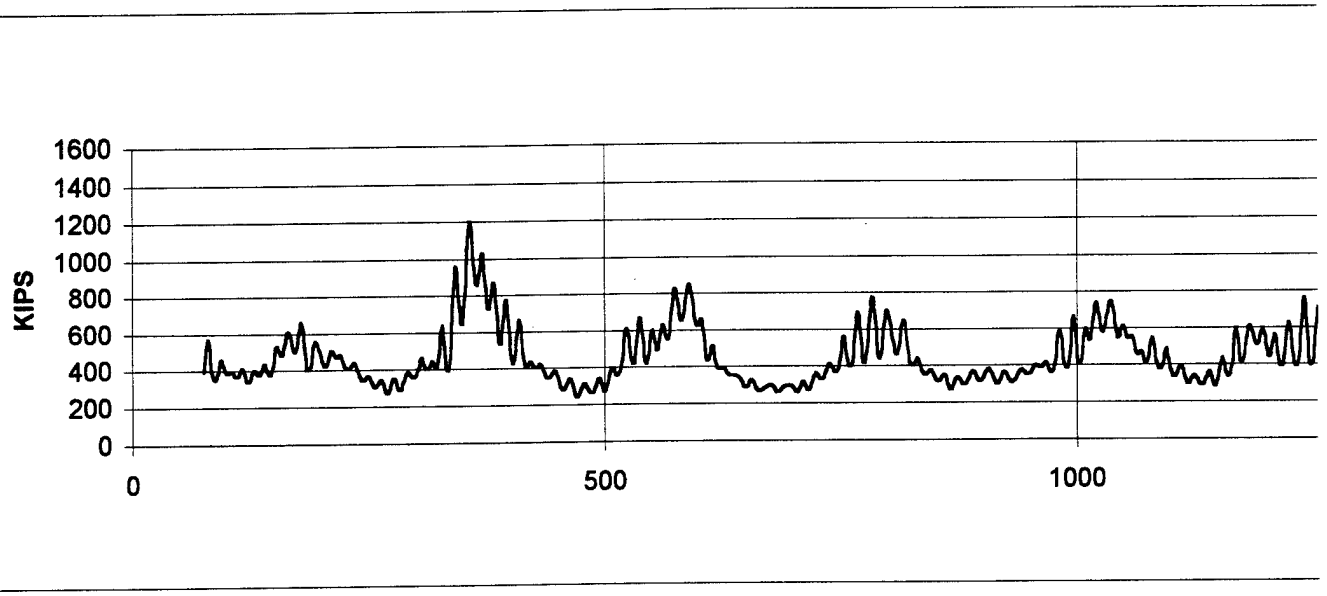

## Filtered High Frequency Time History

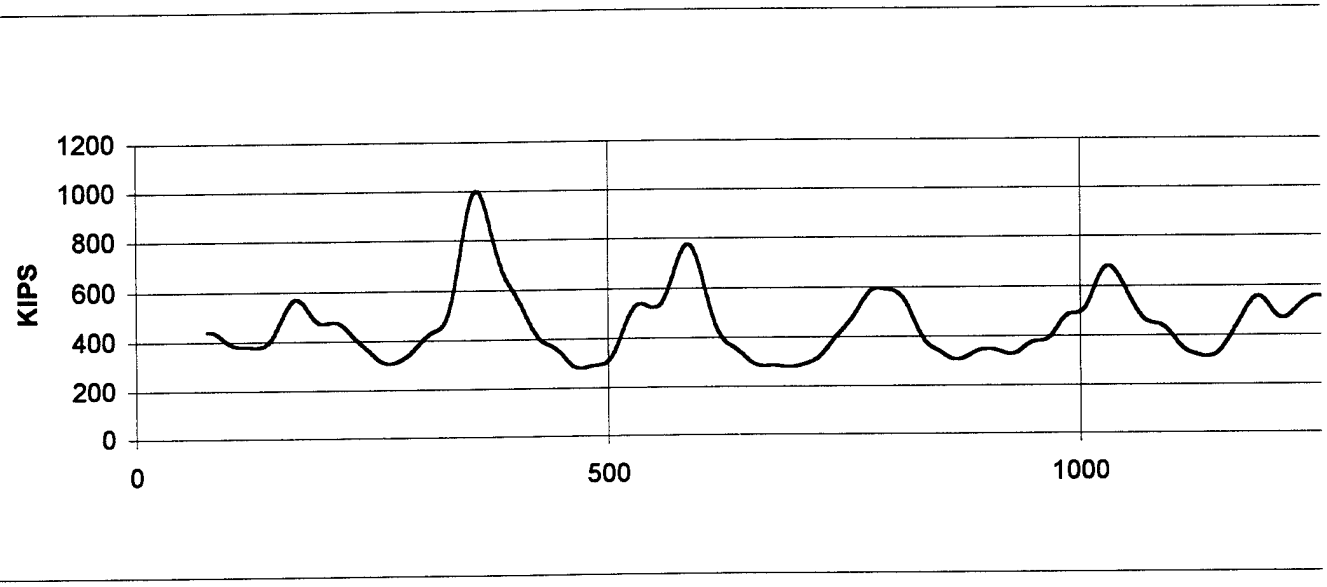


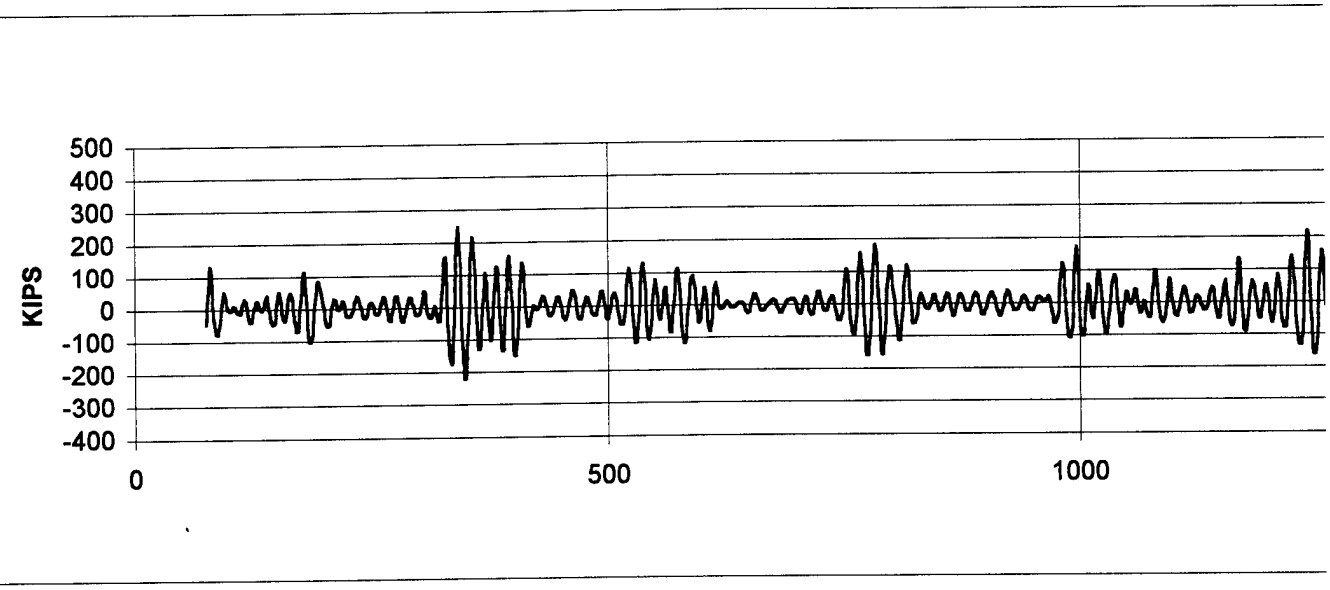
TEST A556B - PT HEAVE



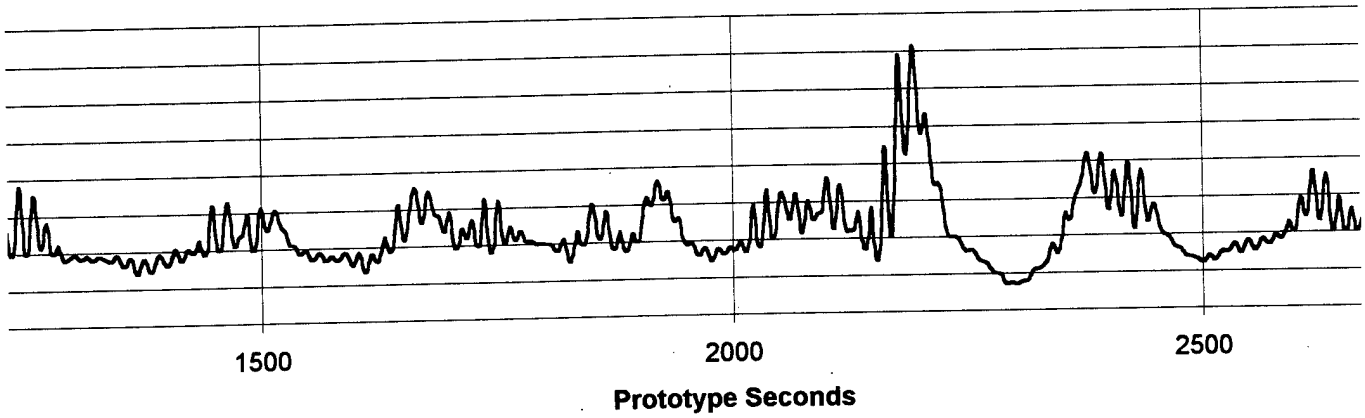
TEST A557 - ML_1



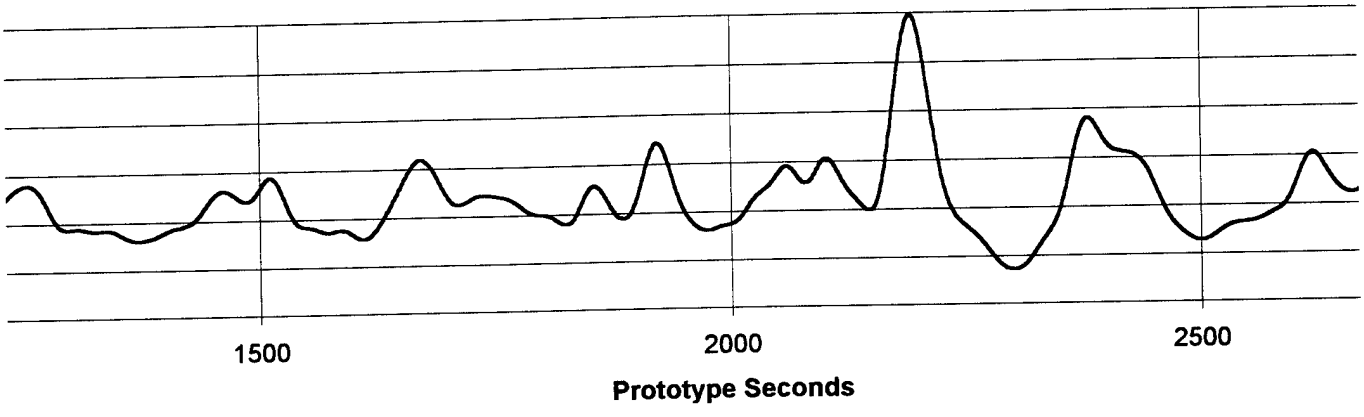



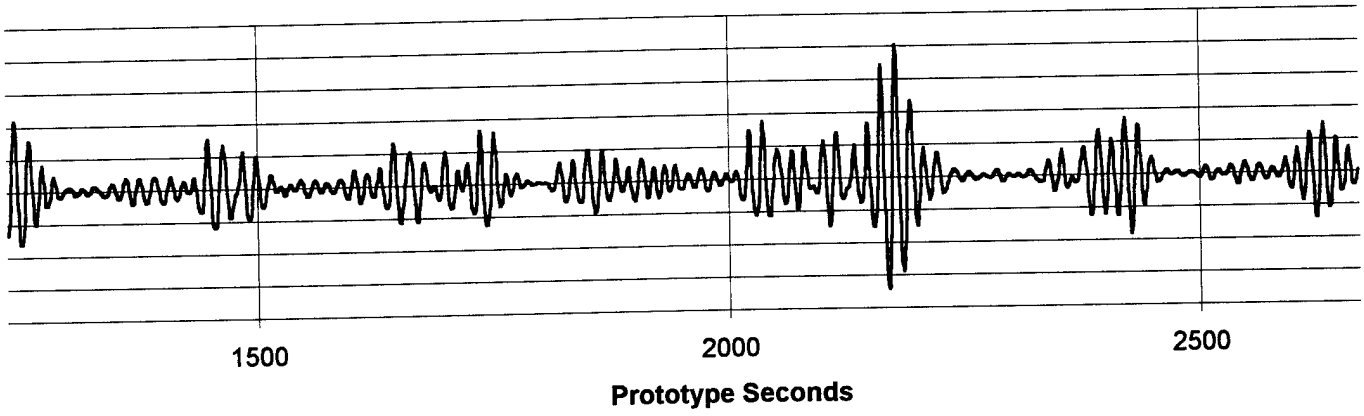
## Unfiltered Time History



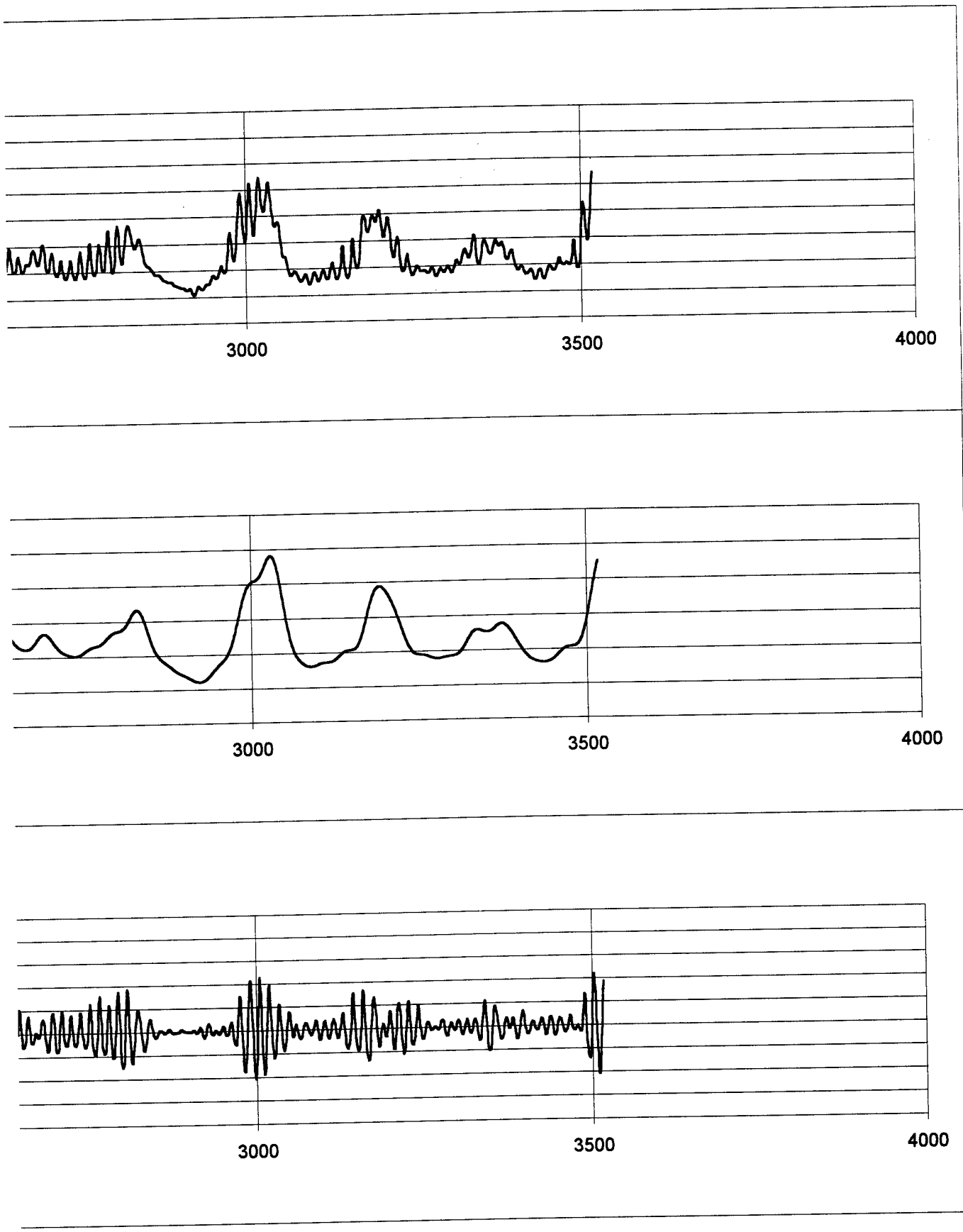

## Filtered Low Frequency Time History



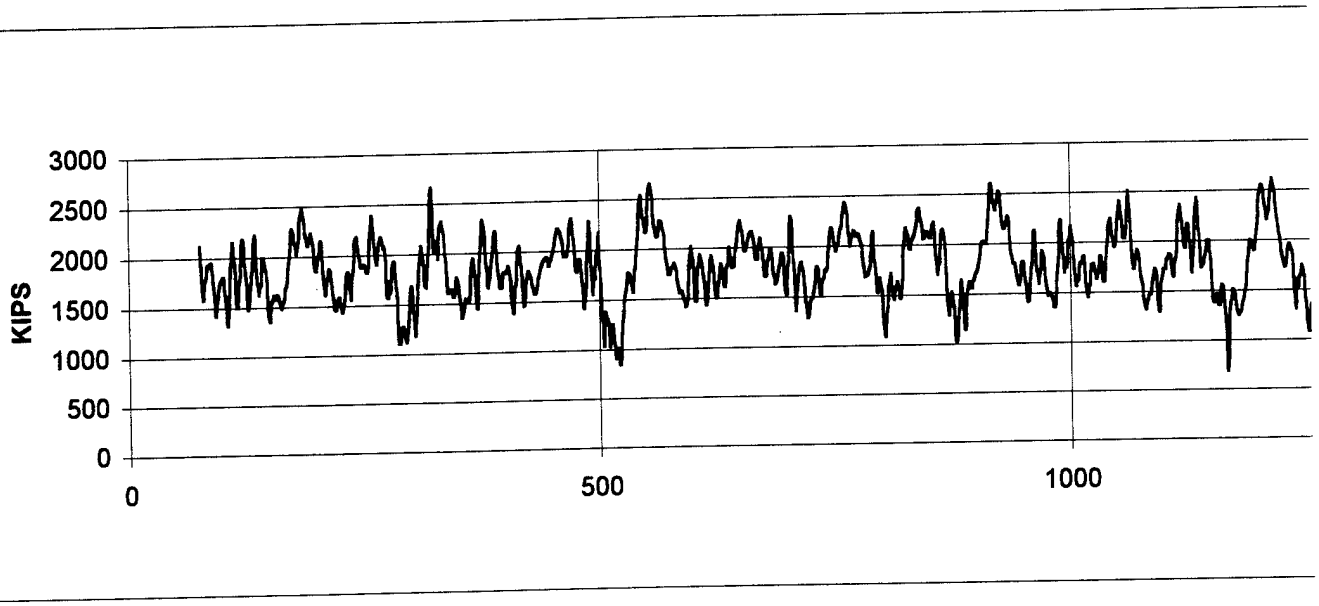

## Filtered High Frequency Time History

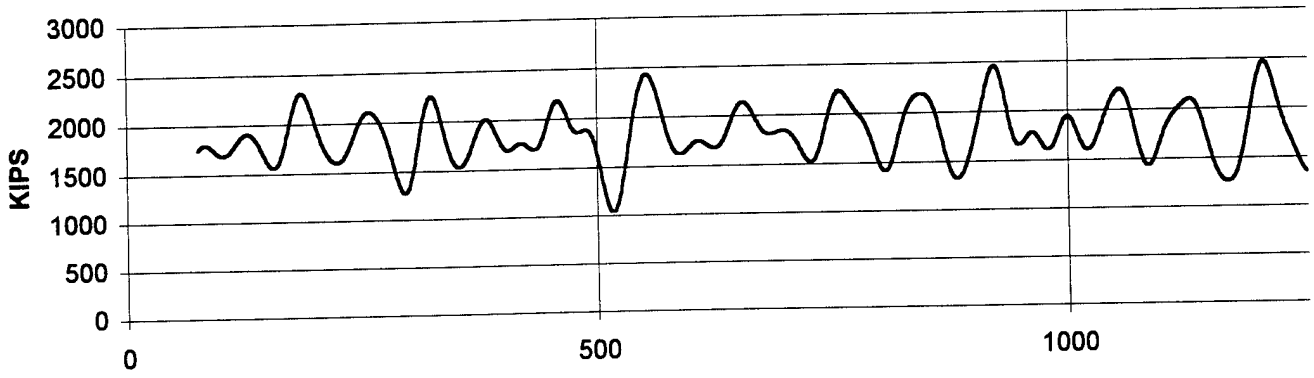


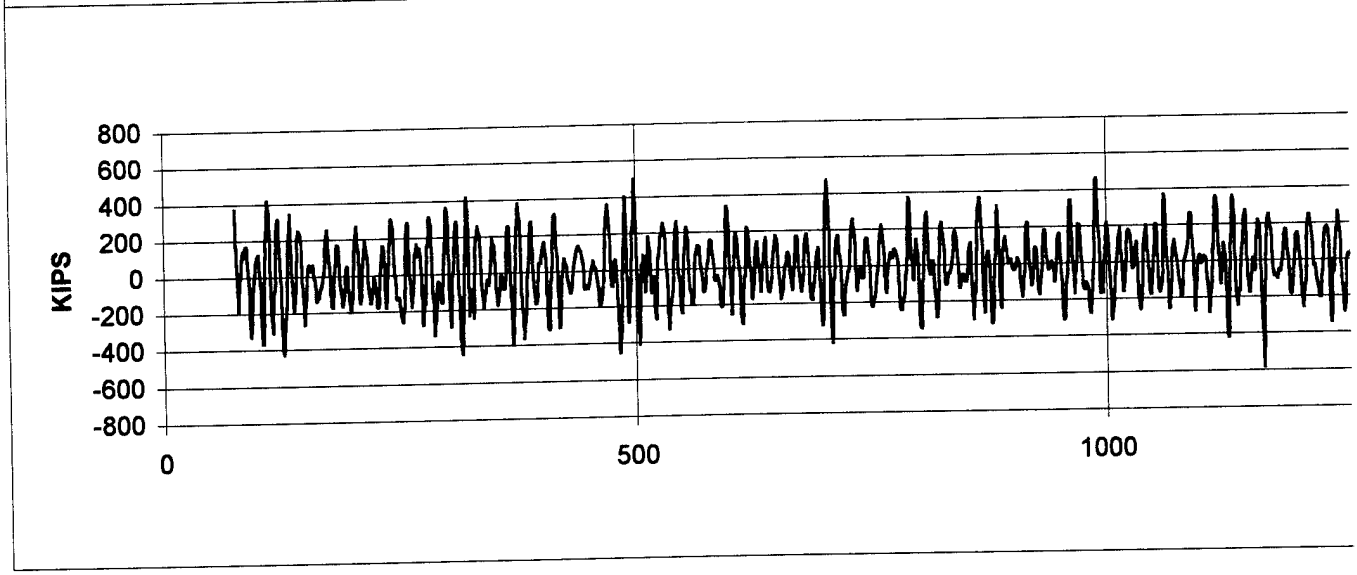
TEST A557 - ML_1



TEST A557 - BUOY 1 TENSION

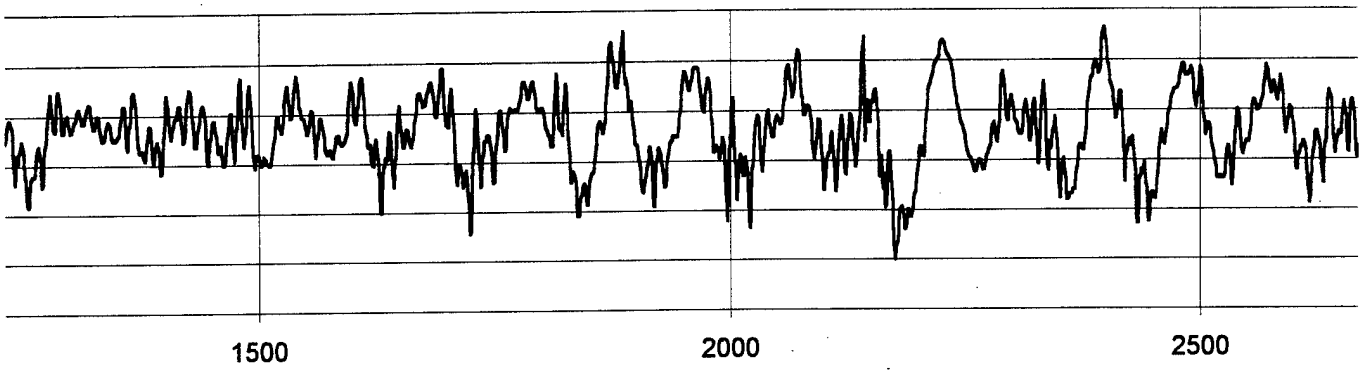


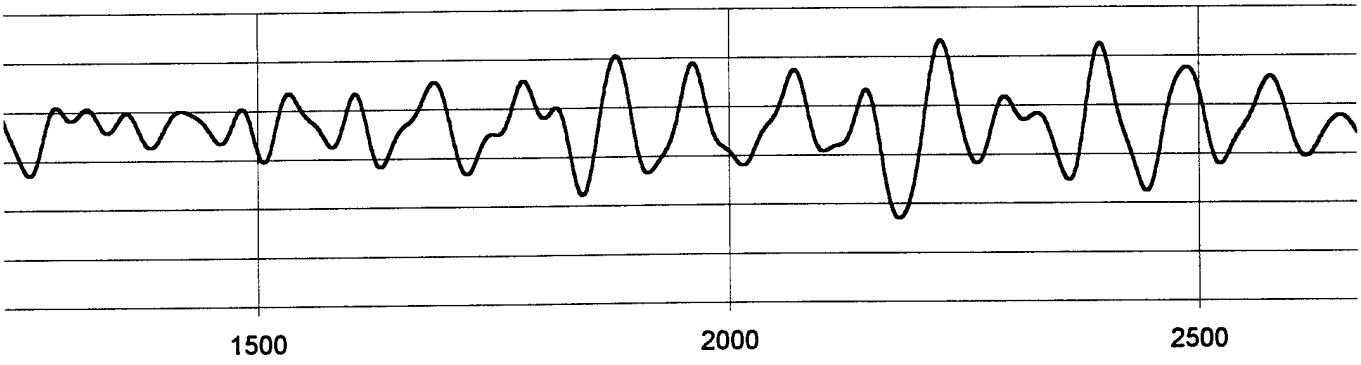



TEST A557 - BUOY 1 TENSION

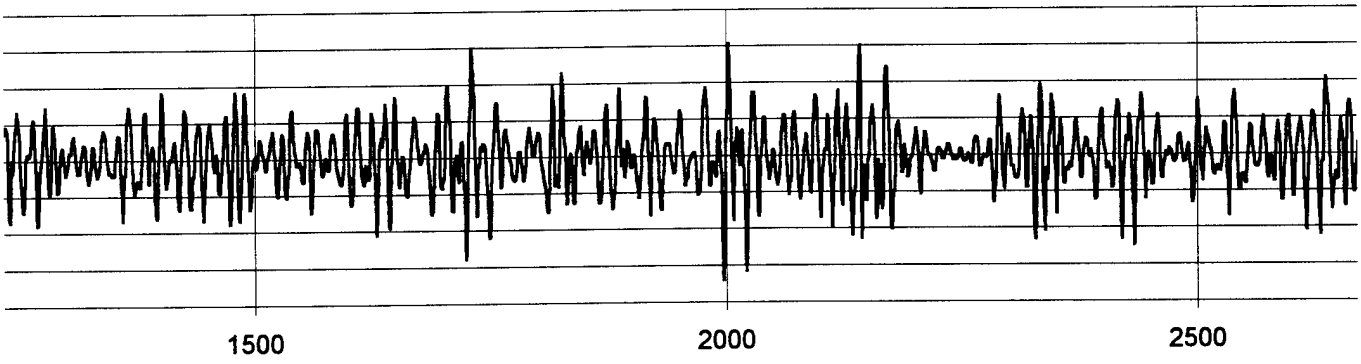
## Unfiltered Time History



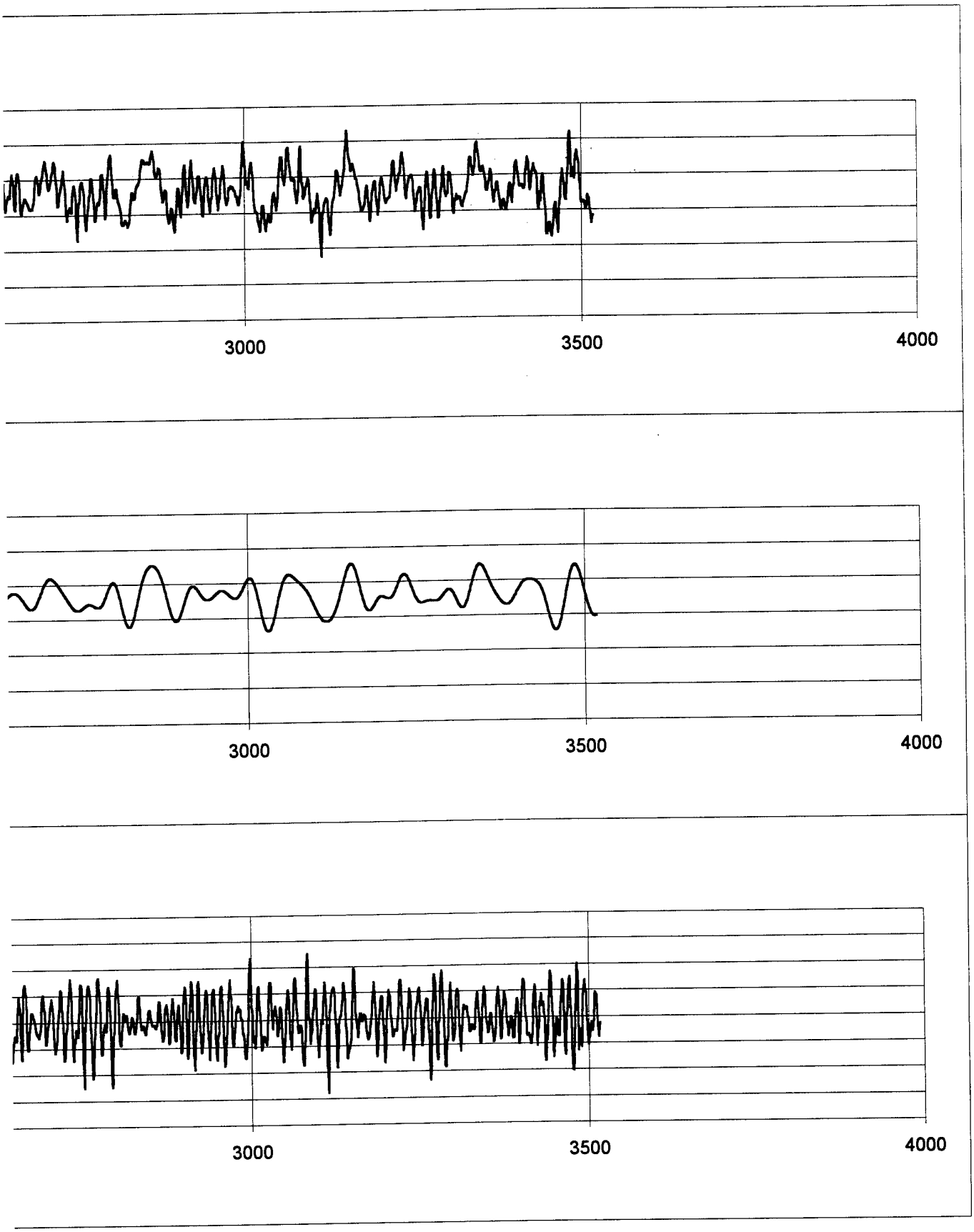

## Filtered Low Frequency Time History



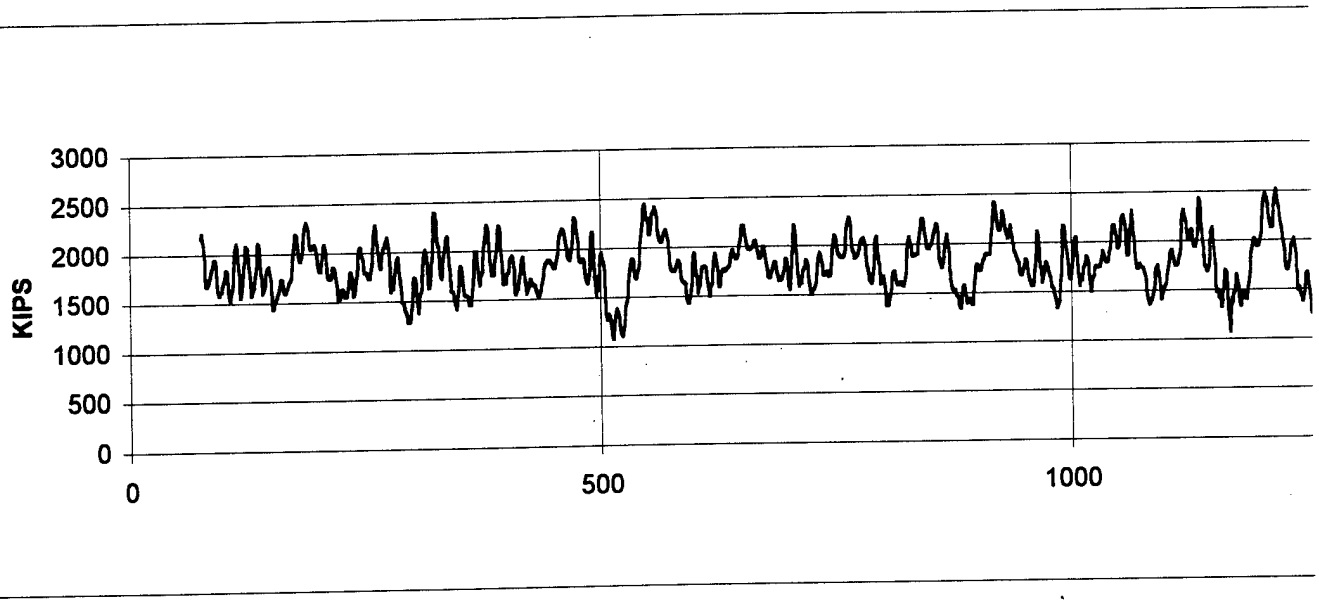

## Filtered High Frequency Time History

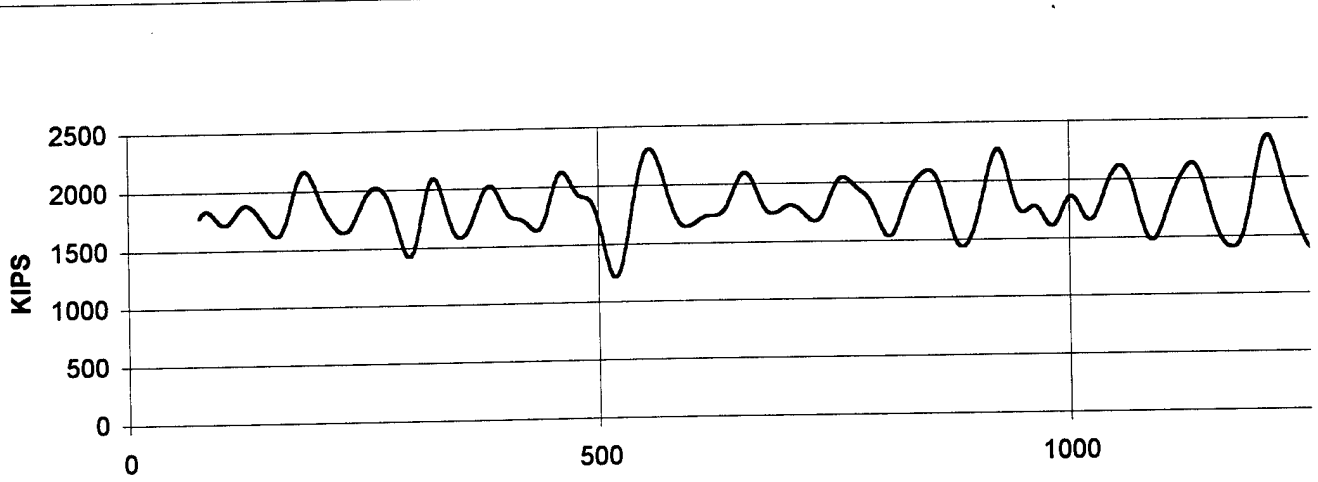


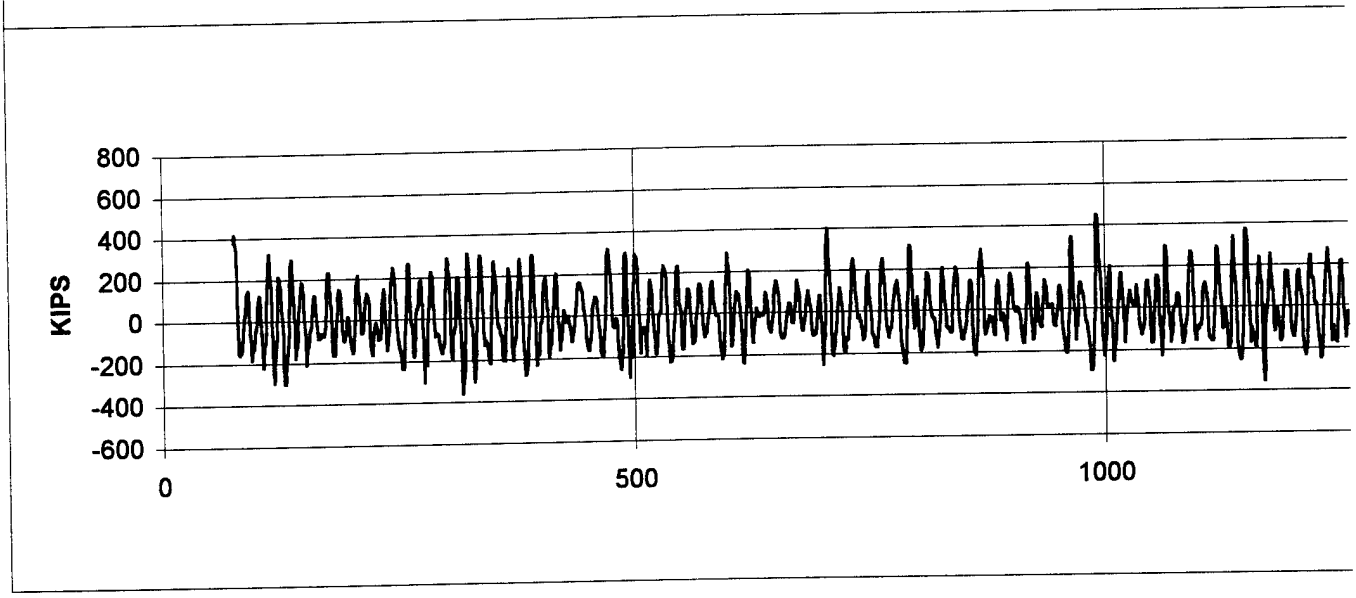
TEST A557 - BUOY 1 TENSION



TEST A557 - BUOY 2 TENSION

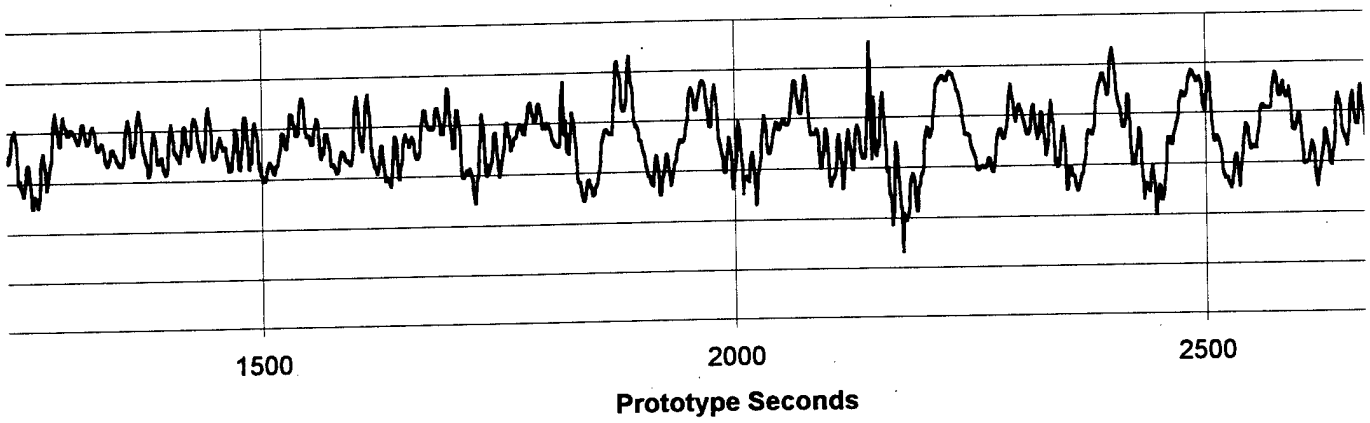


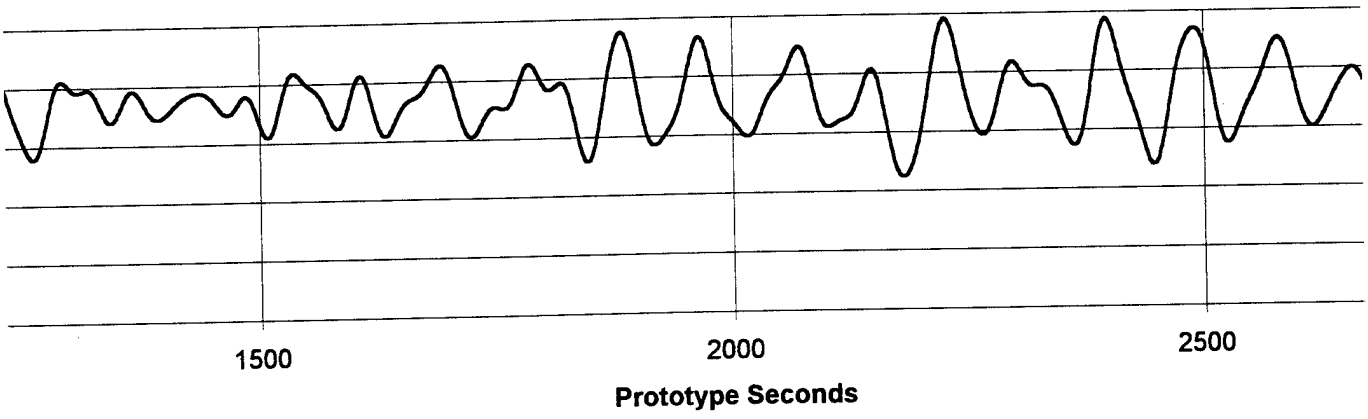



TEST A557 - BUOY 2 TENSION

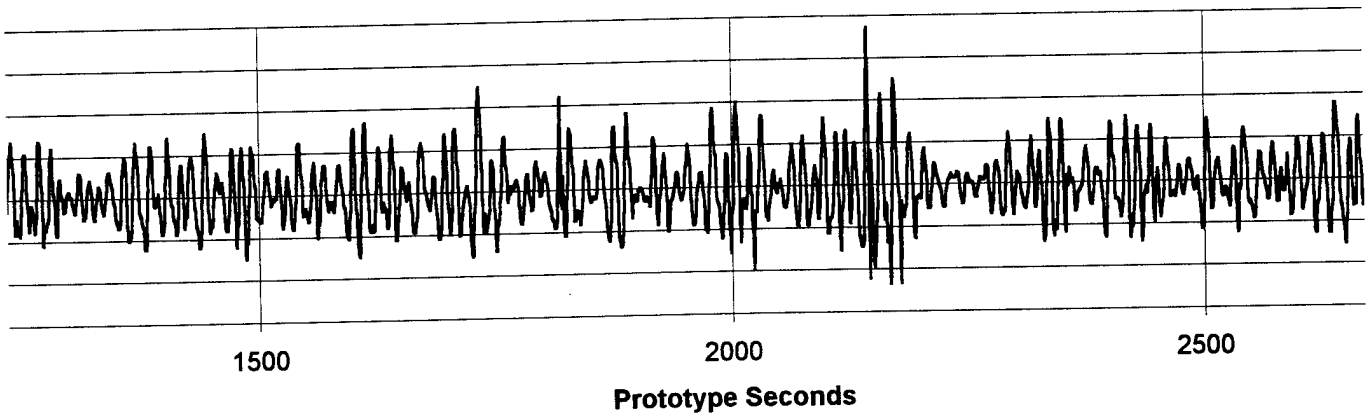
## Unfiltered Time History



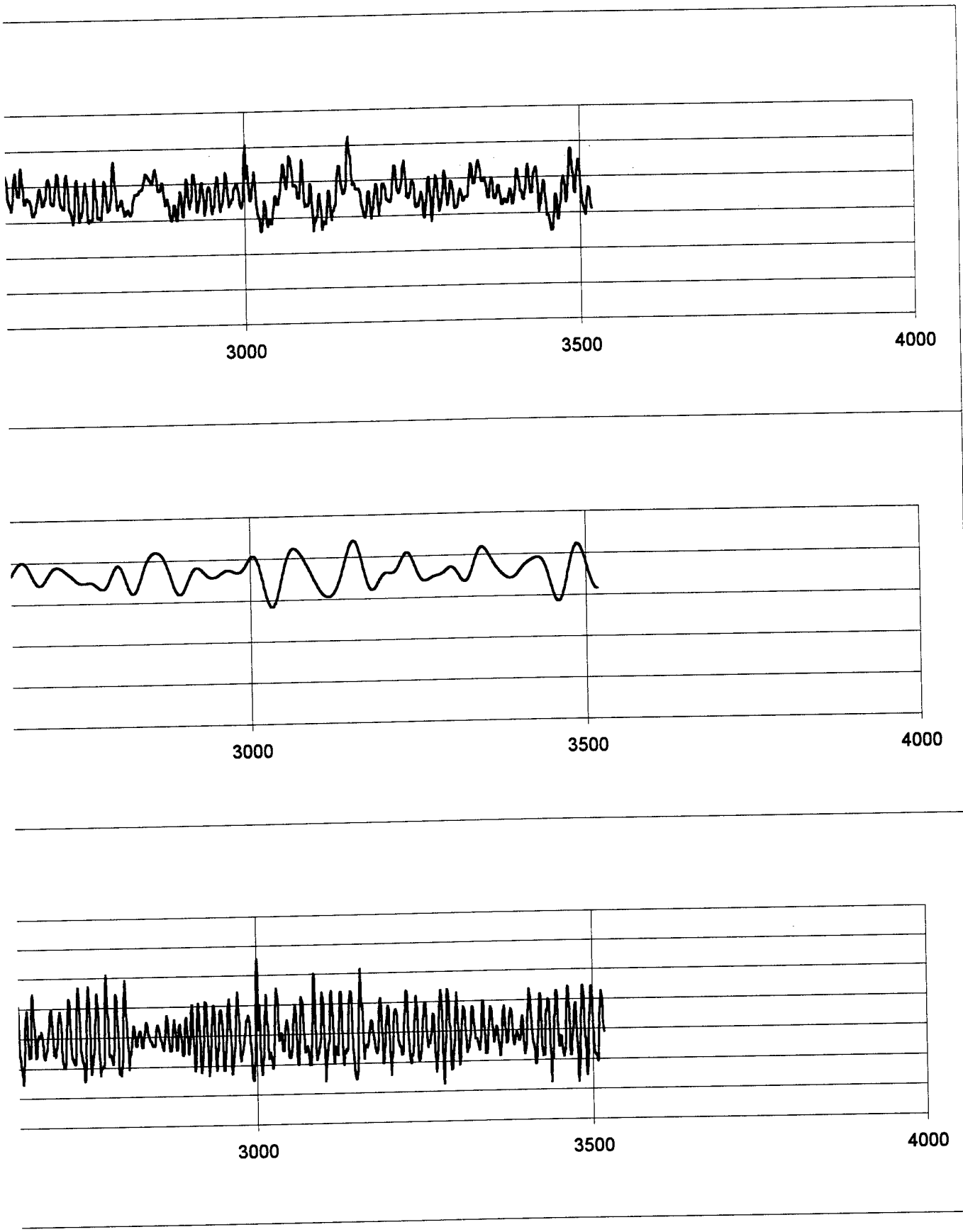

## Filtered Low Frequency Time History



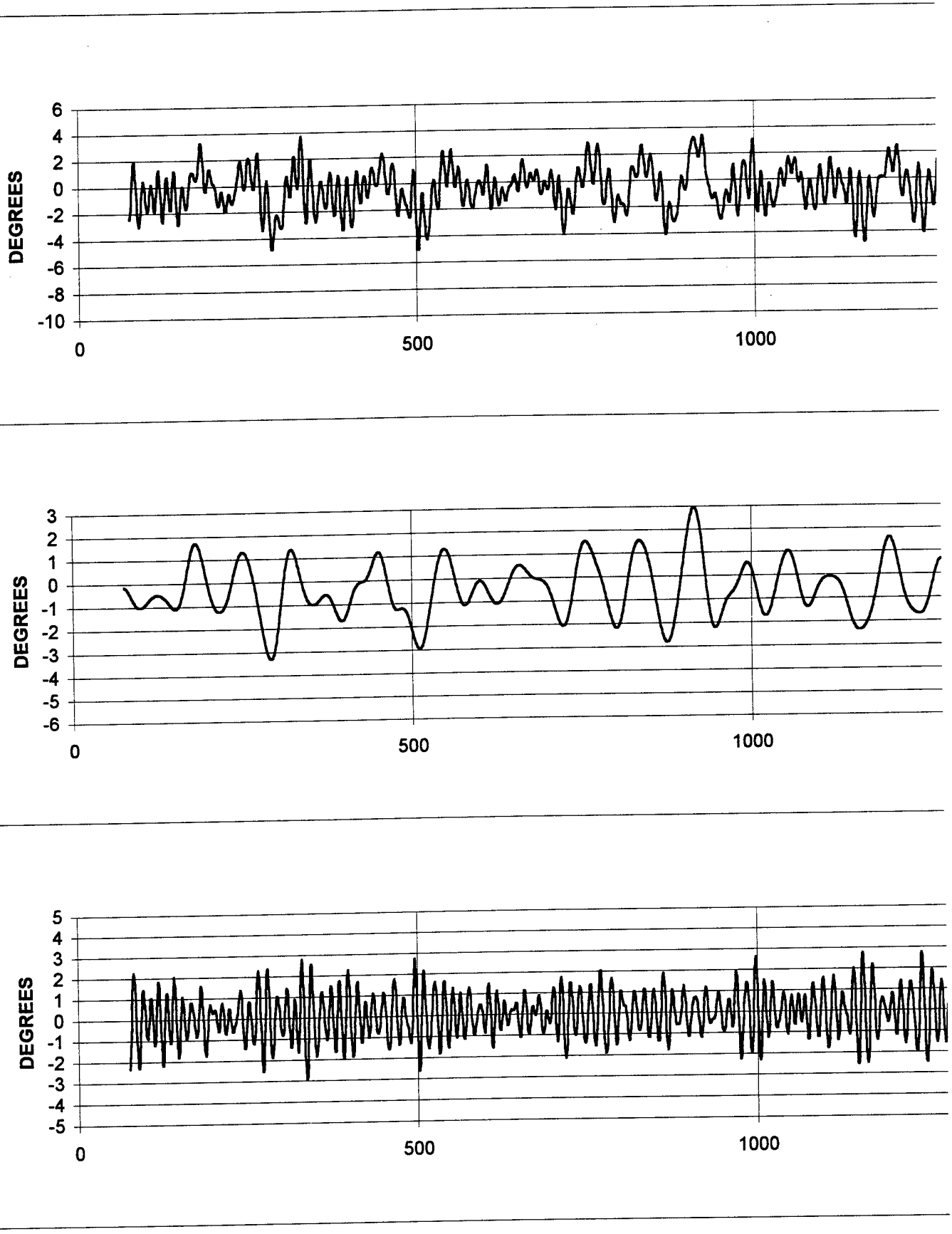

## Filtered High Frequency Time History



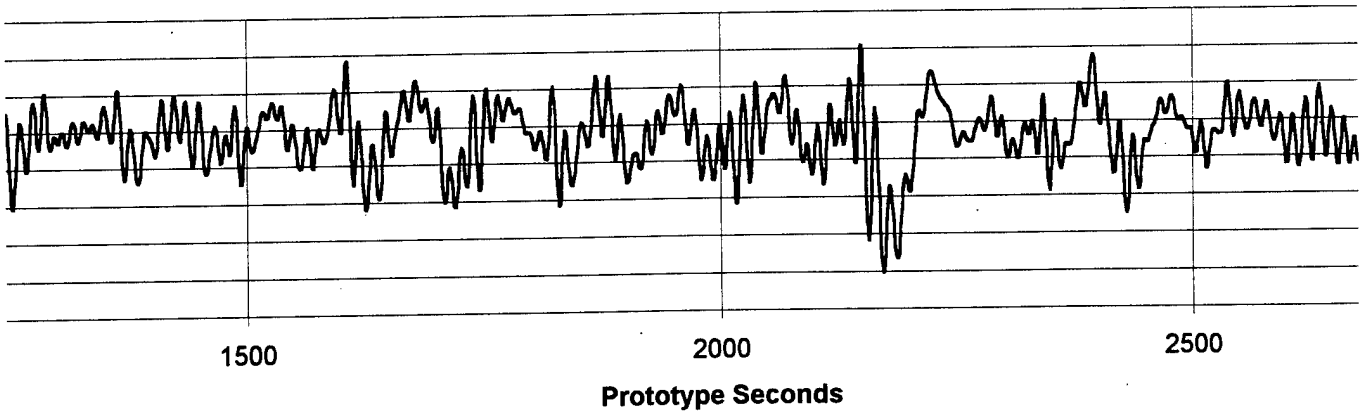
TEST A557 - BUOY 2 TENSION



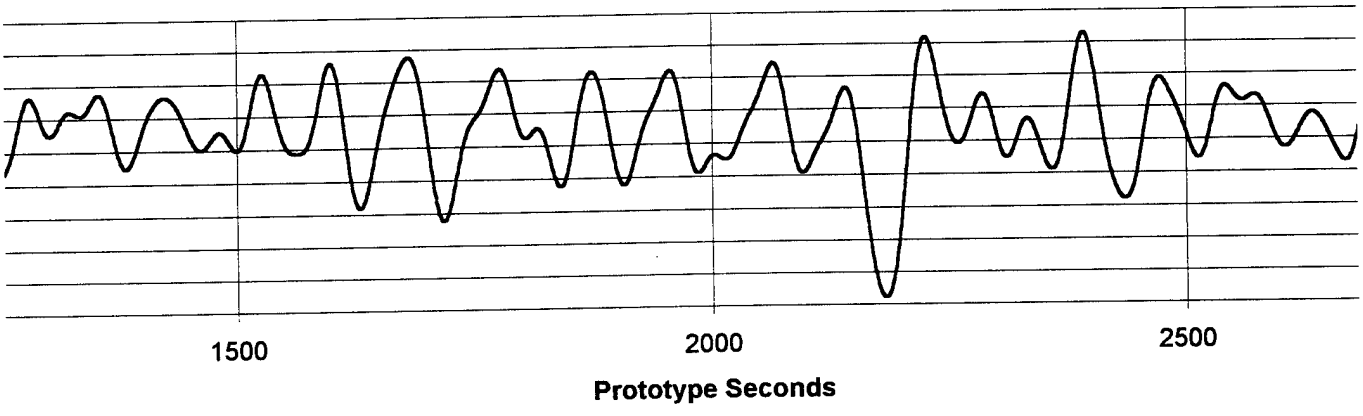
TEST A557 - PITCH



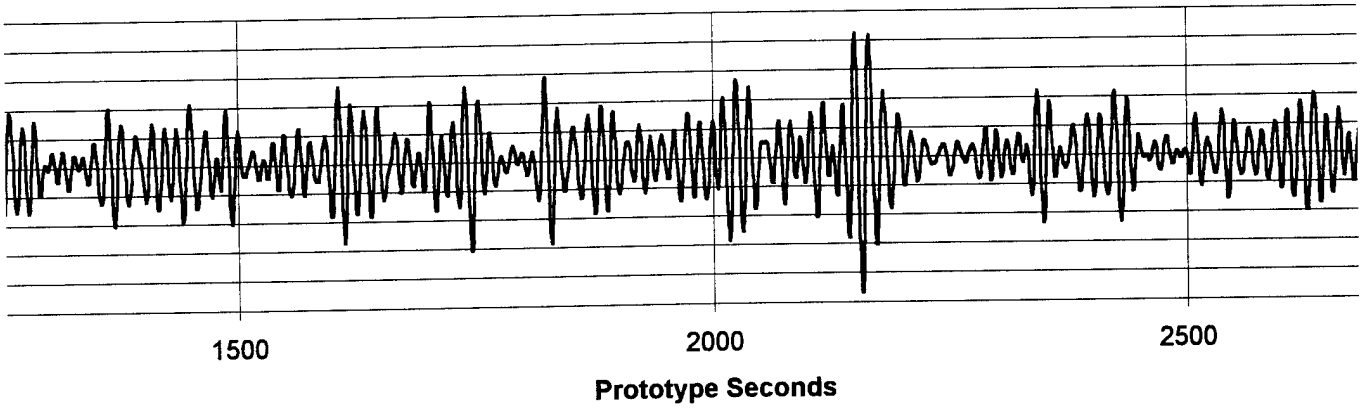
## Unfiltered Time History



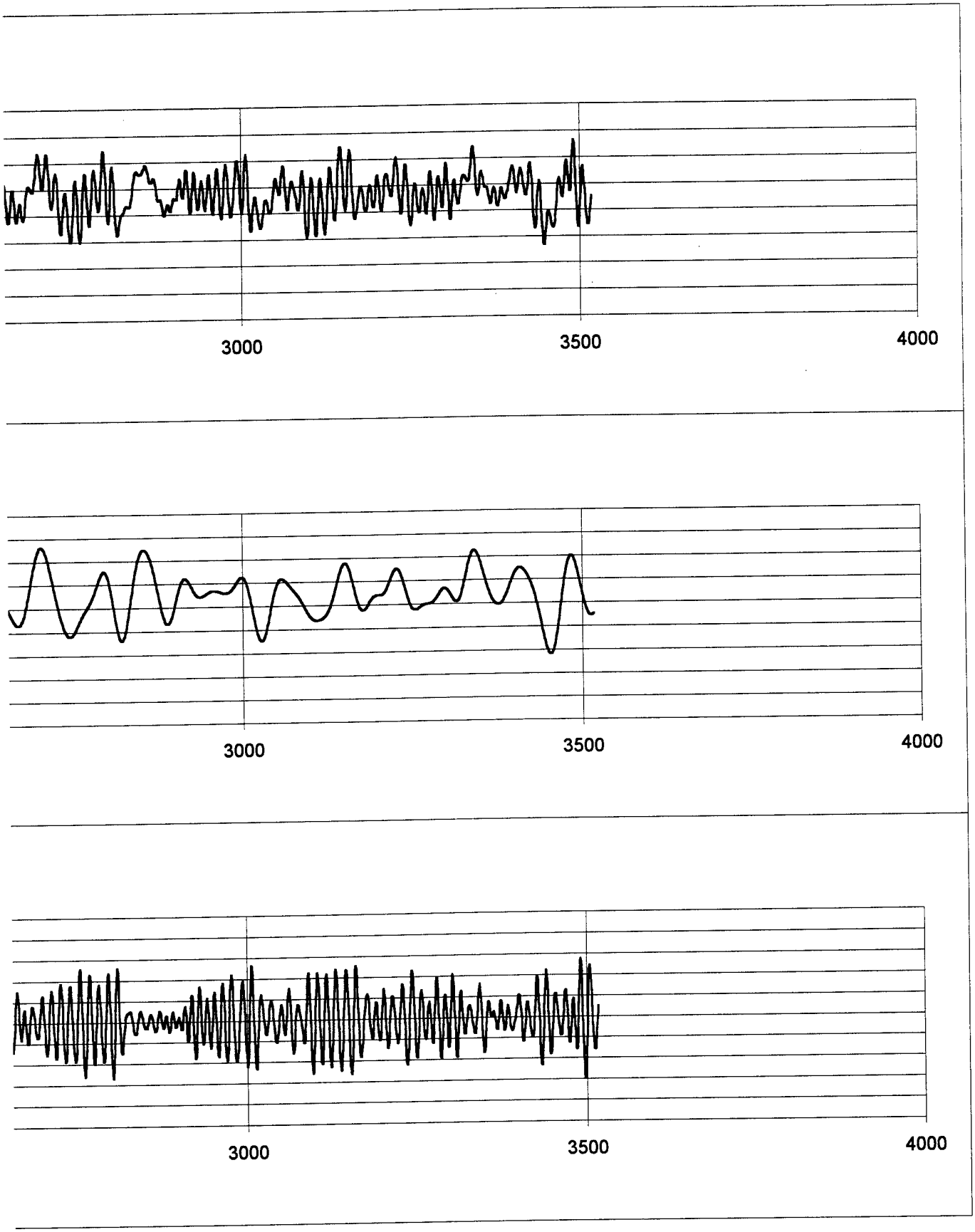

## Filtered Low Frequency Time History



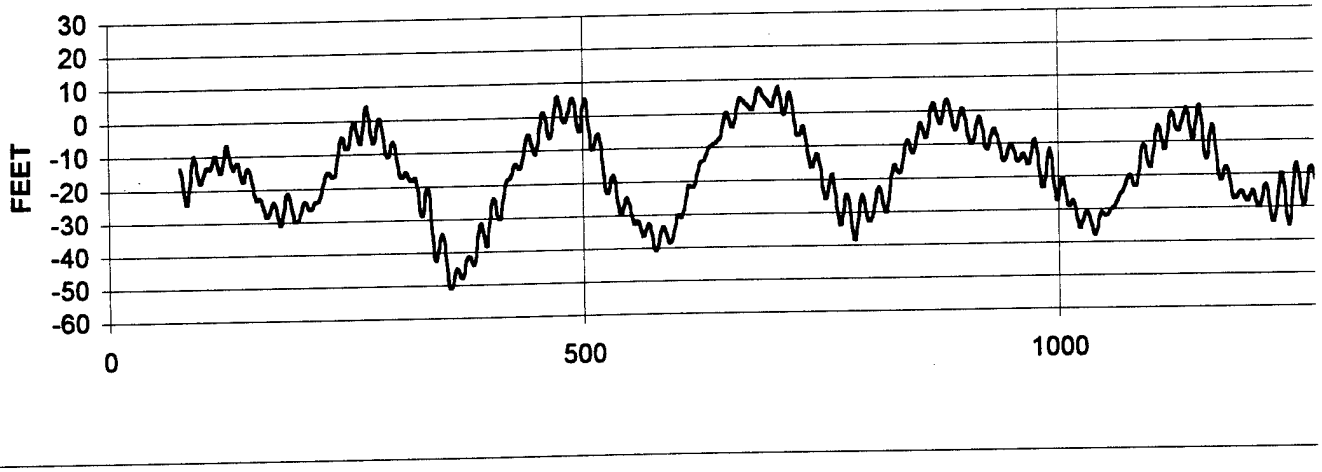

## Filtered High Frequency Time History

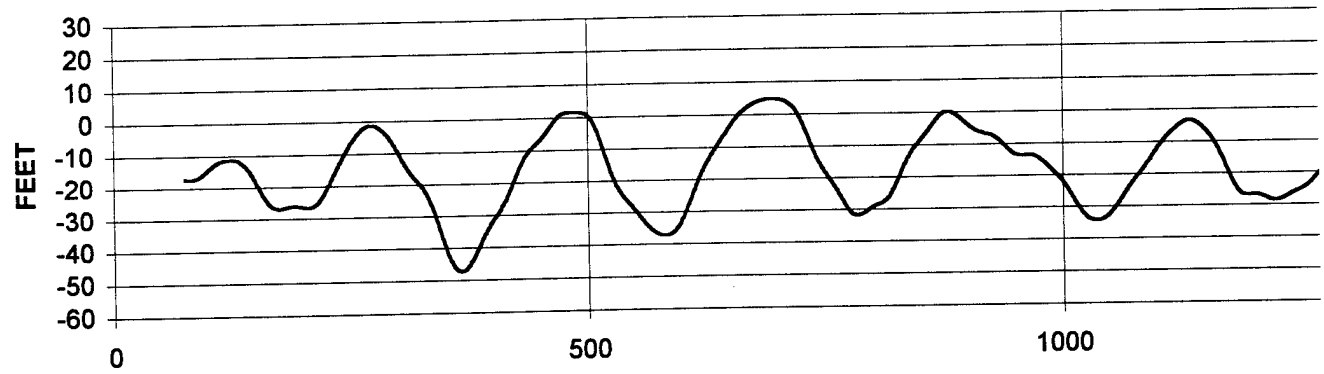


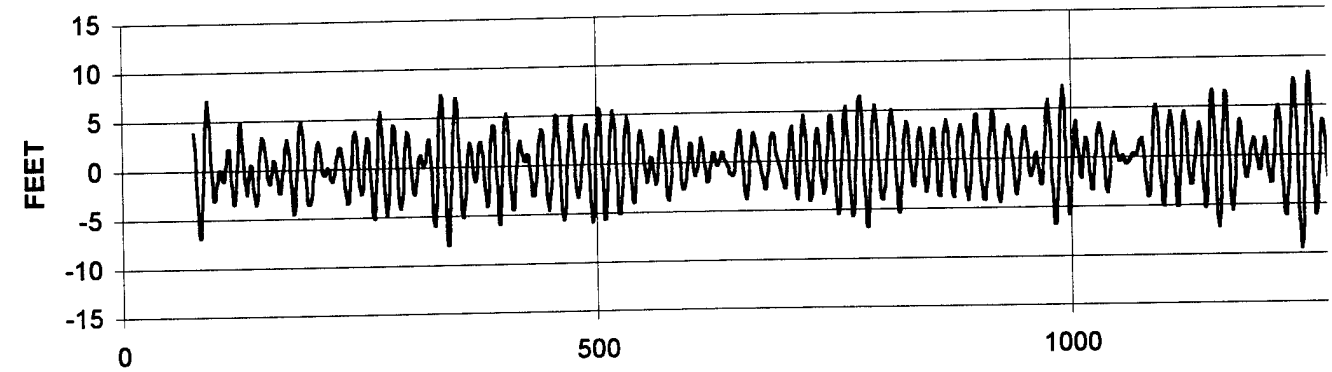
TEST A557 - PITCH



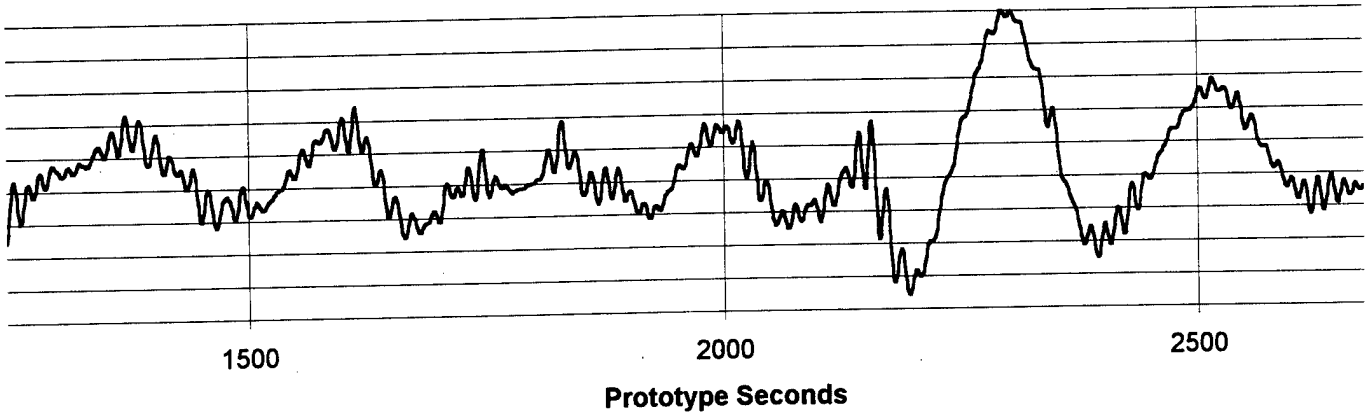
TEST A557 - PT SURGE



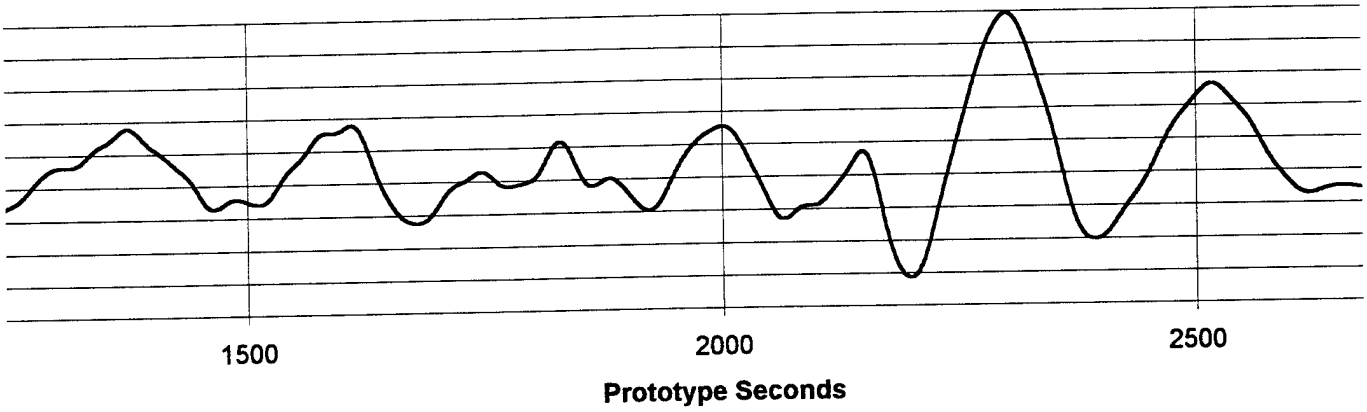



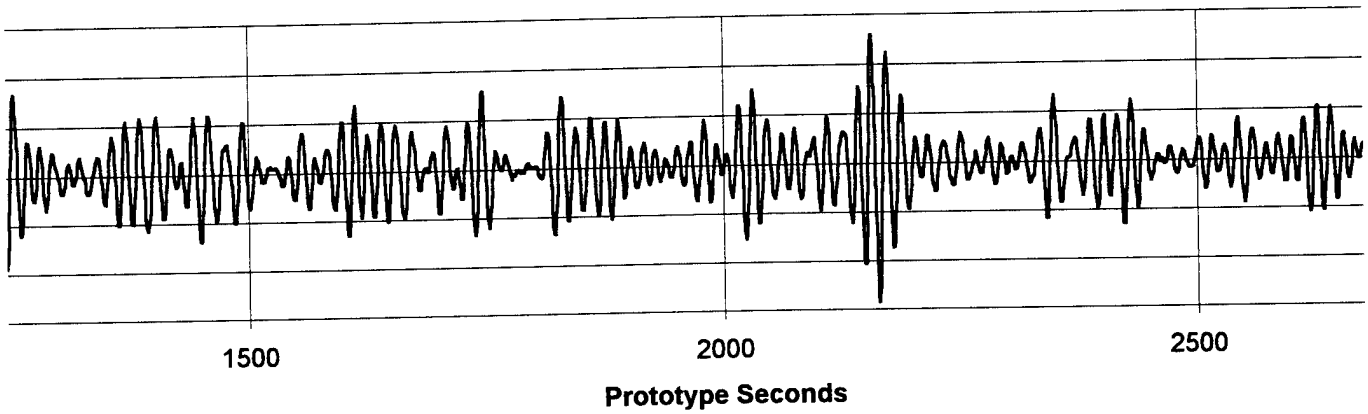
## Unfiltered Time History



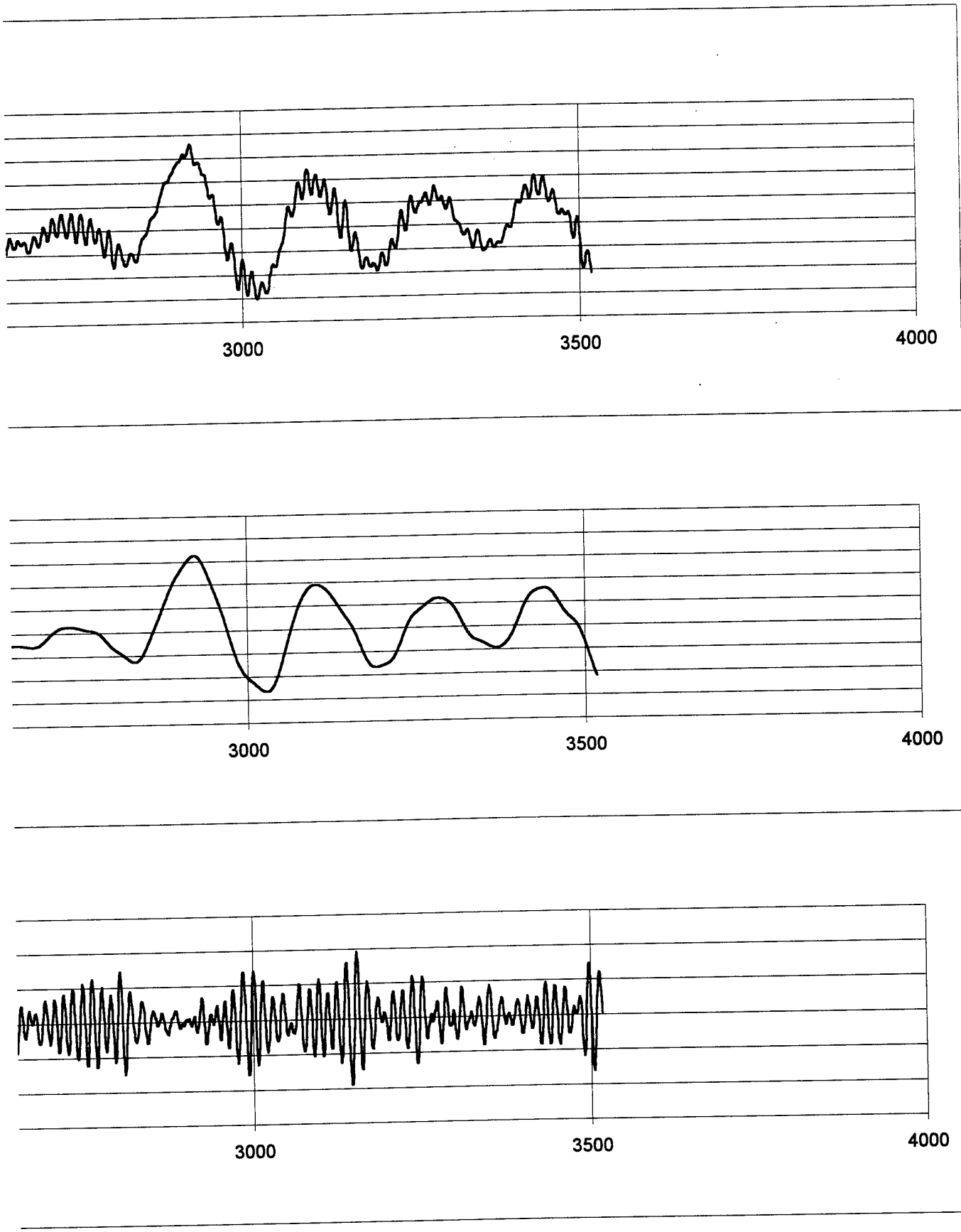

## Filtered Low Frequency Time History



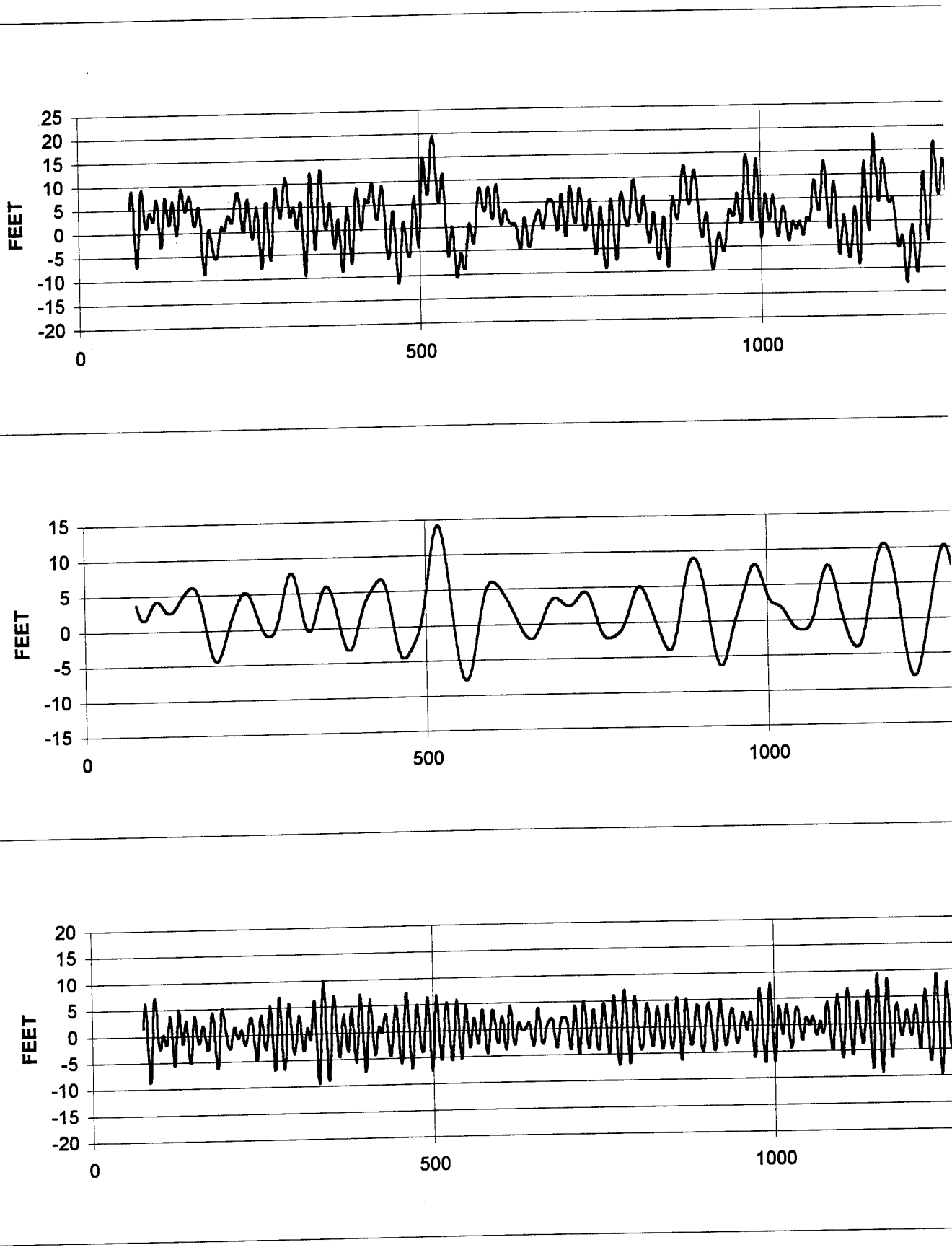

## Filtered High Frequency Time History



TEST A557 - PT SURGE

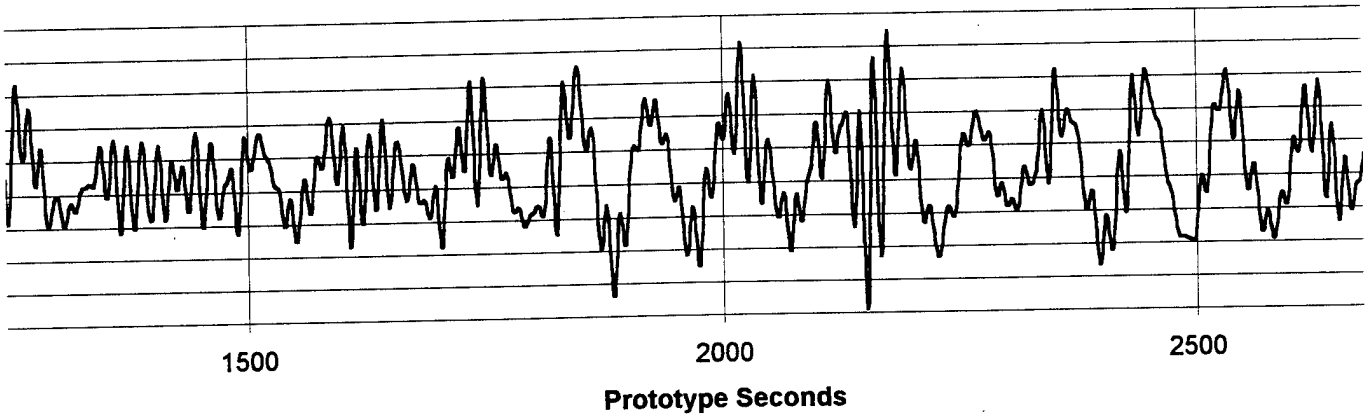


TEST A557 - PT HEAVE

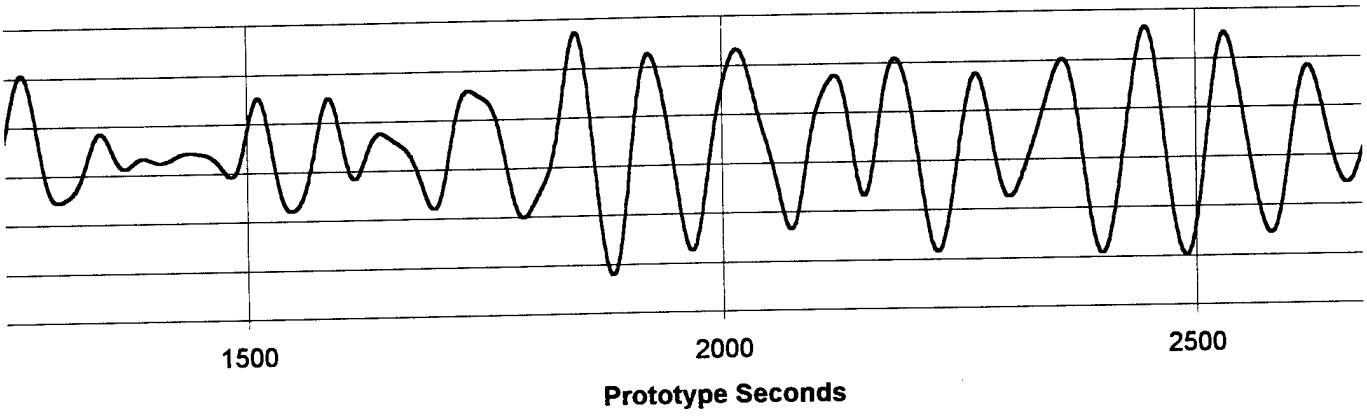


TEST A557 - PT HEAVE

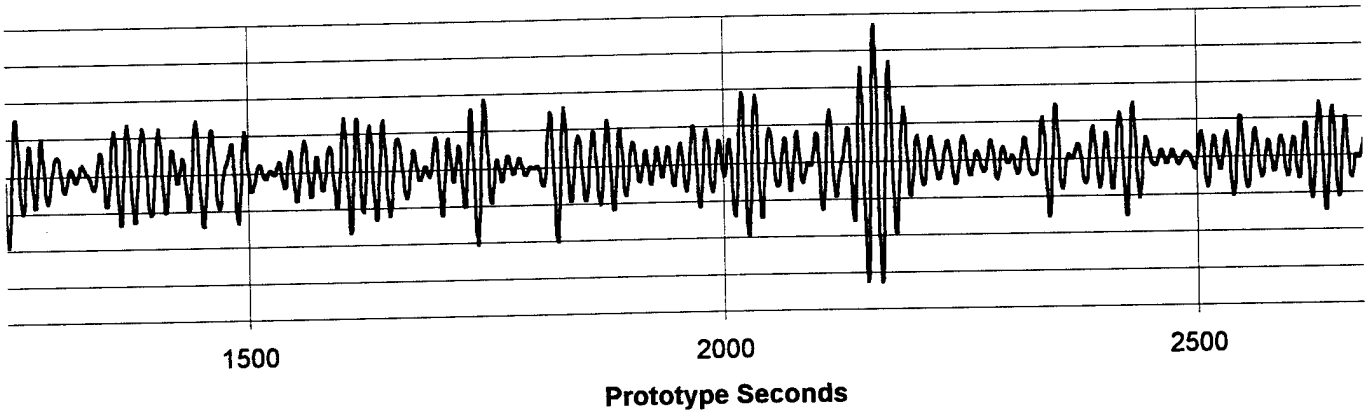
## Unfiltered Time History



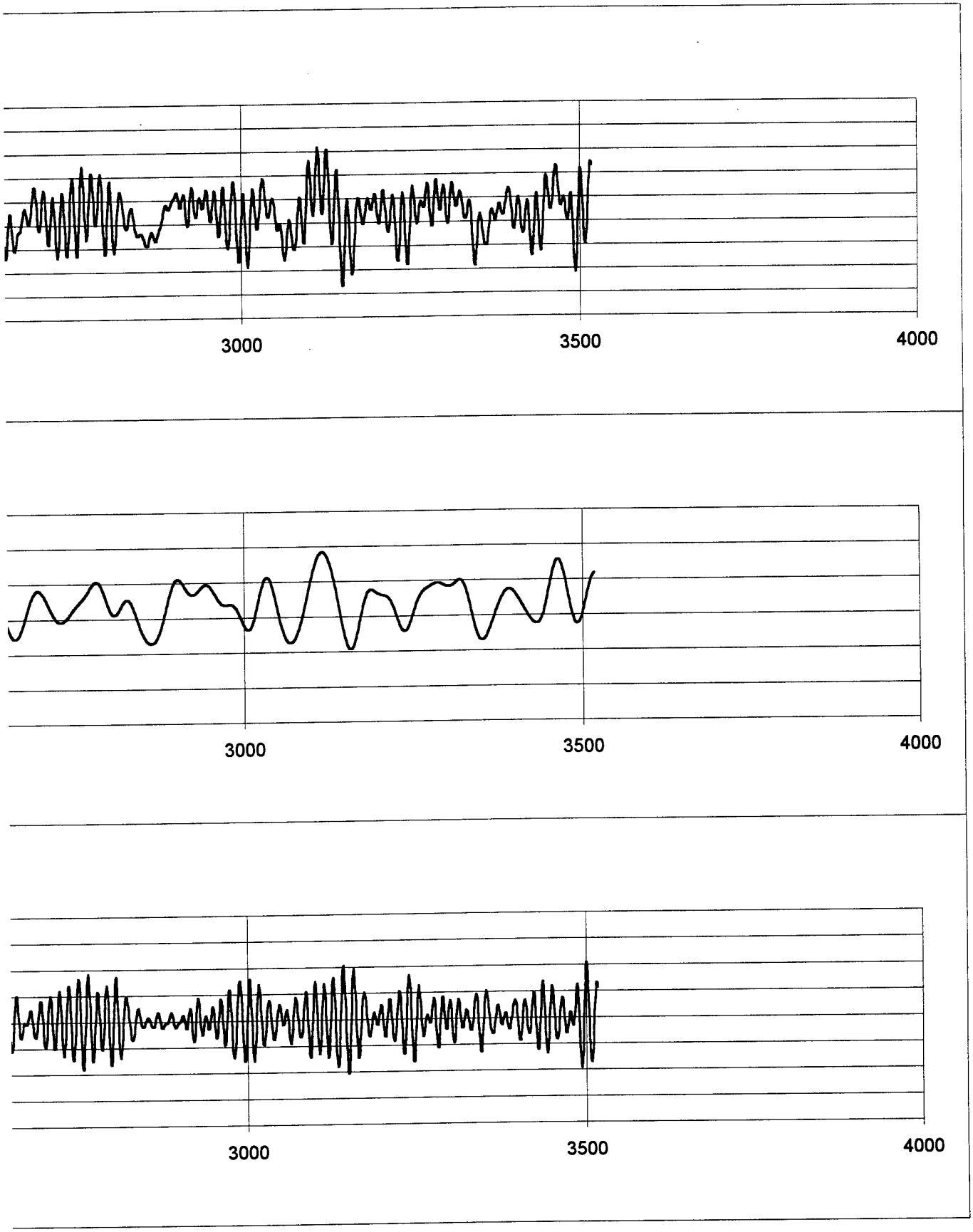

## Filtered Low Frequency Time History



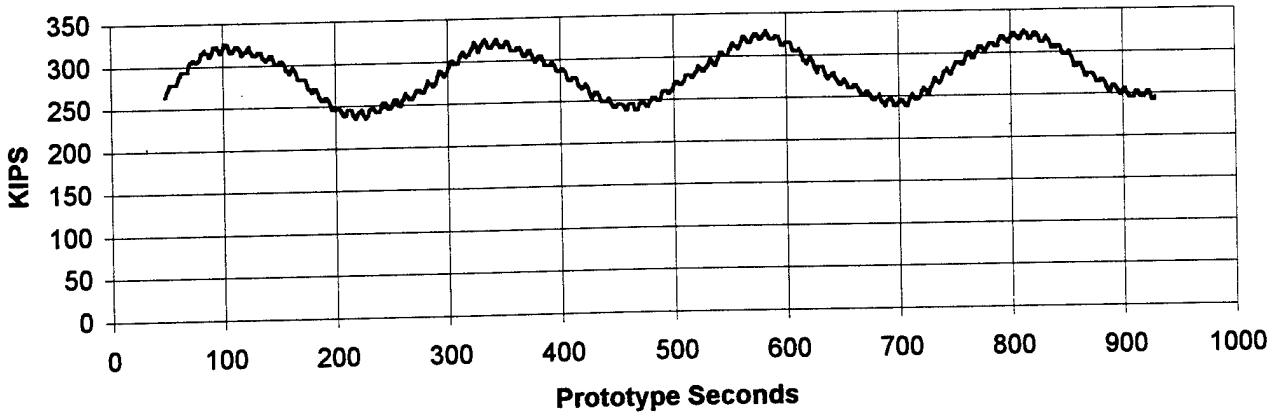

## Filtered High Frequency Time History



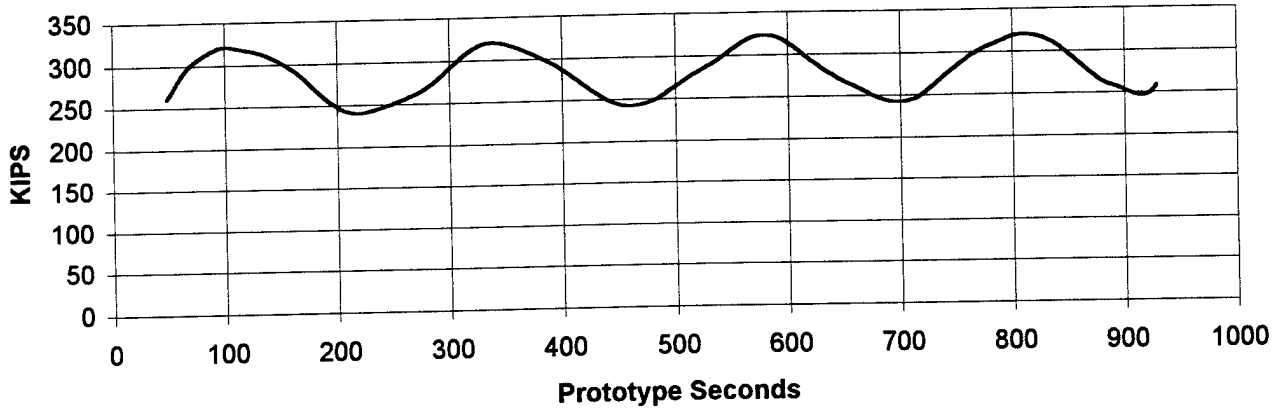
TEST A557 - PT HEAVE



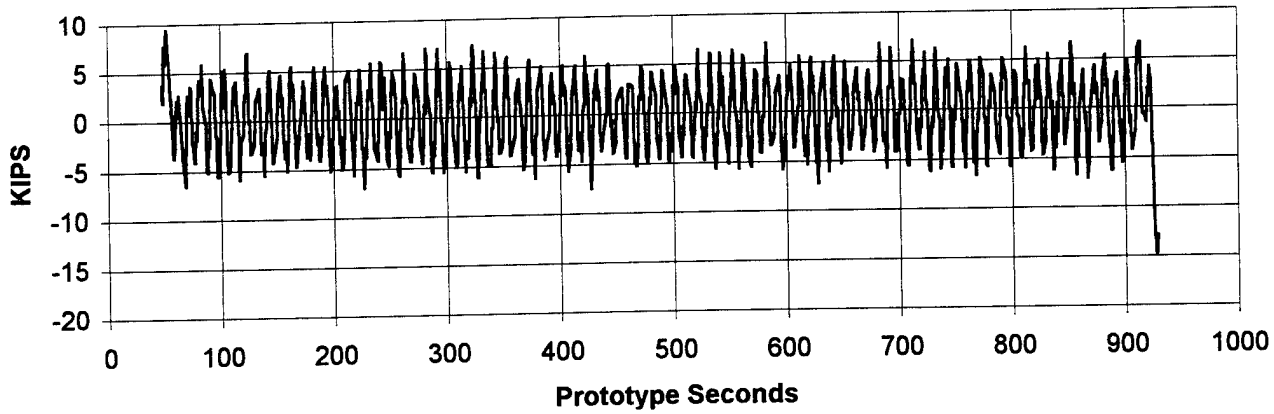
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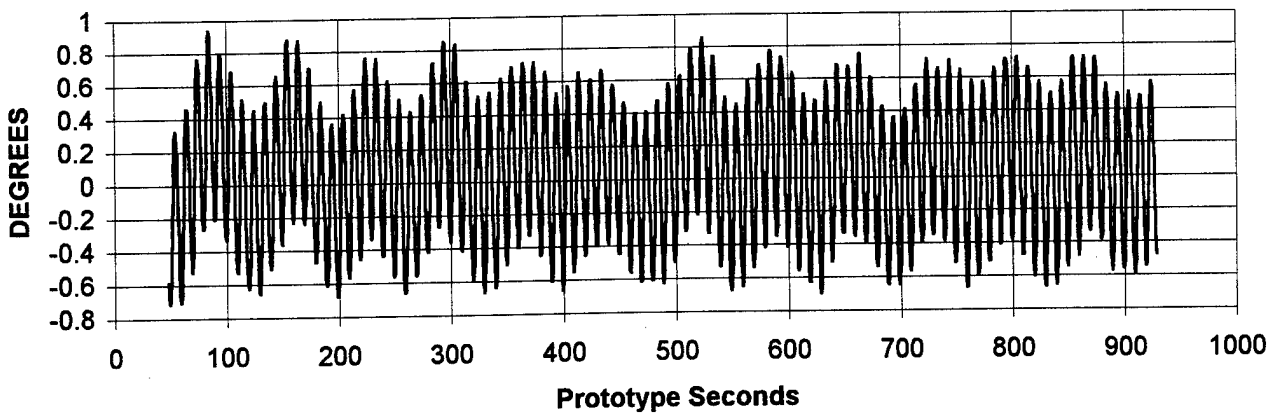

## Filtered Low Frequency Time History



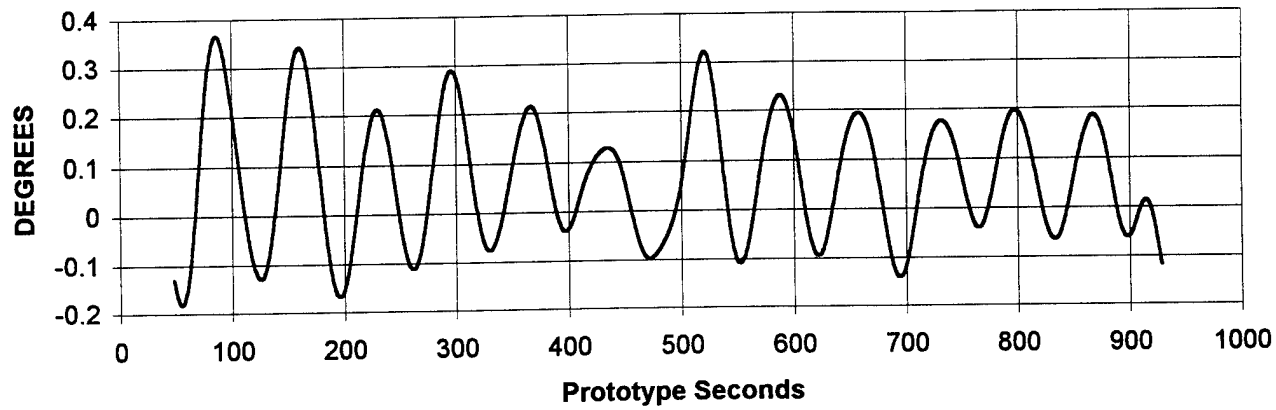

## Filtered High Frequency Time History



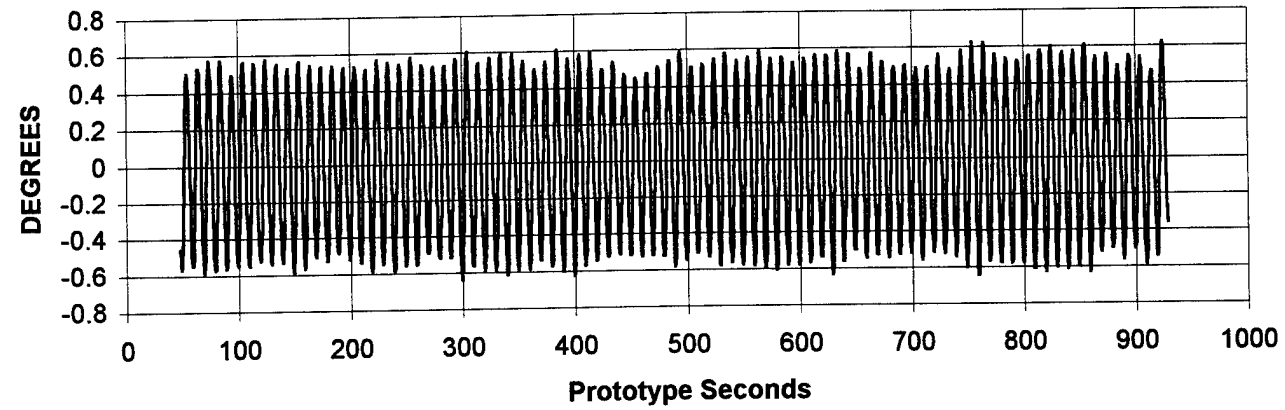
## Unfiltered Time History




## Filtered Low Frequency Time History

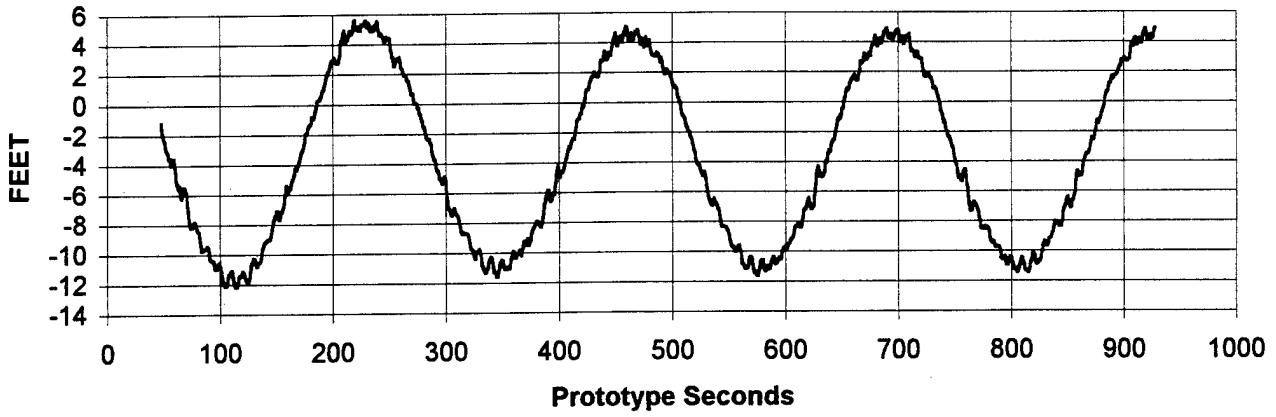



## Filtered High Frequency Time History

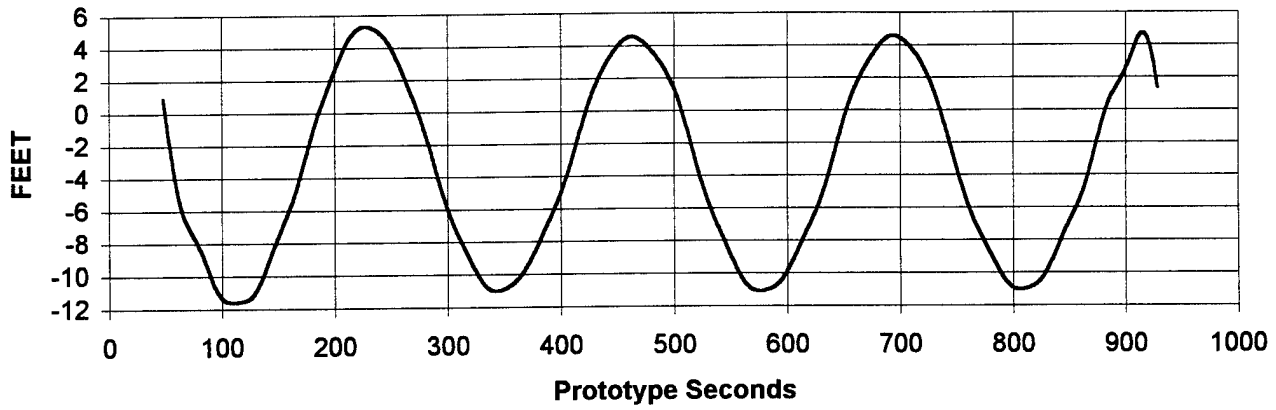


TEST A581 - PT SURGE

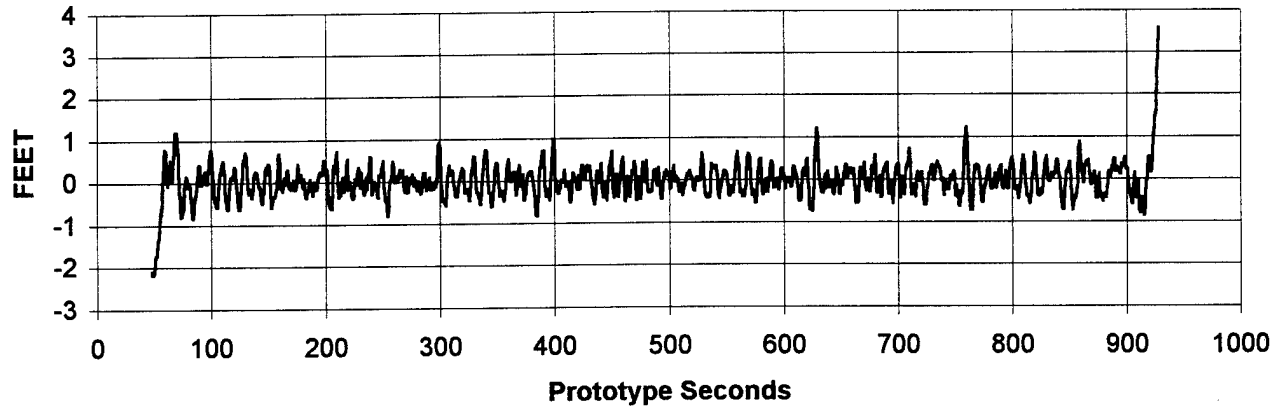
## Unfiltered Time History




## Filtered Low Frequency Time History

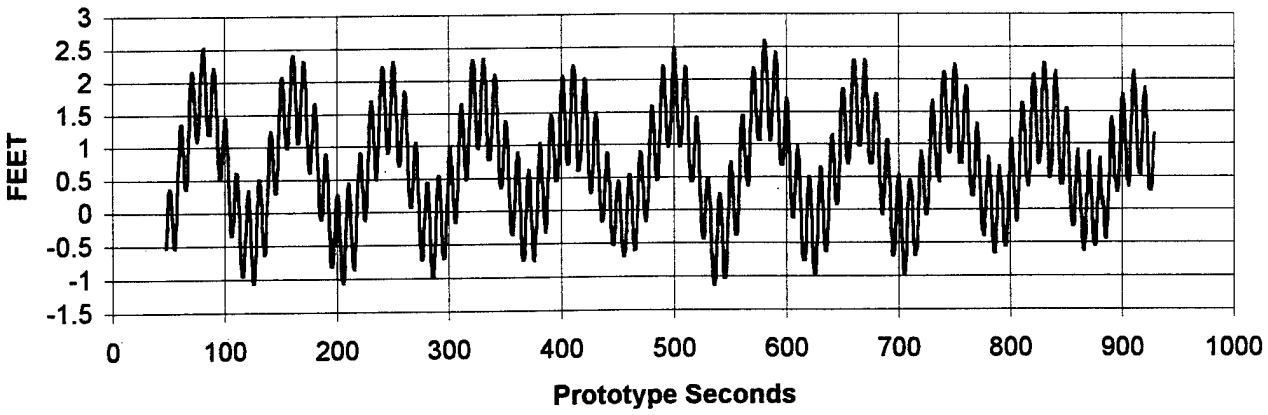



## Filtered High Frequency Time History

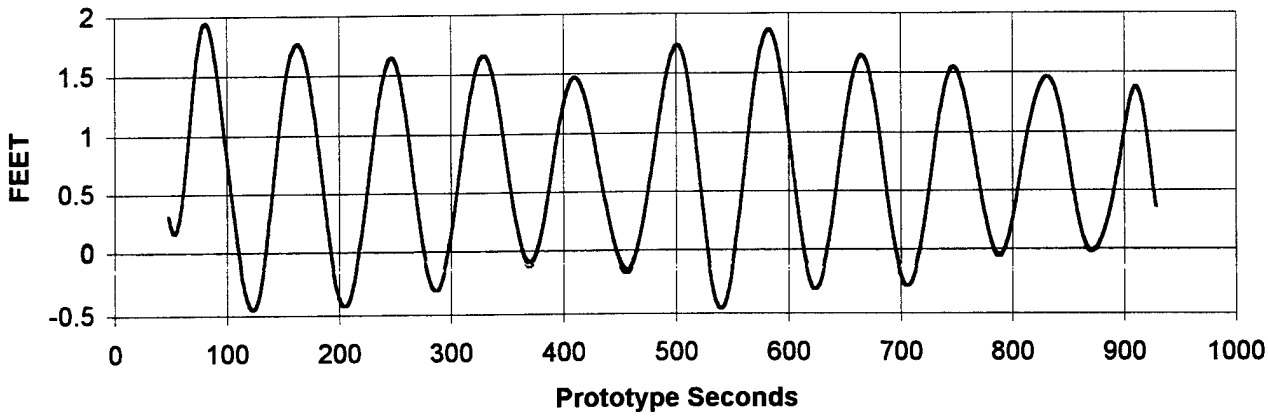


TEST A581 - PT HEAVE

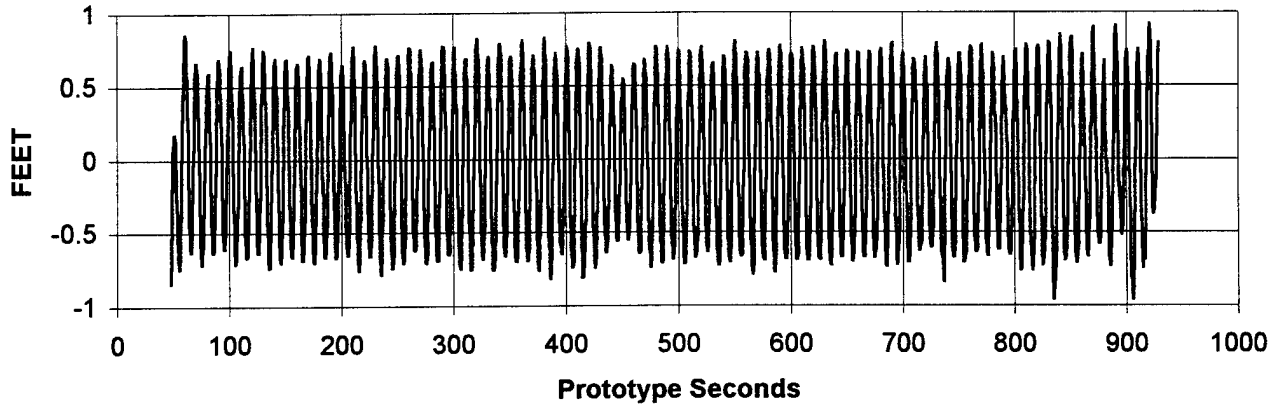
## Unfiltered Time History



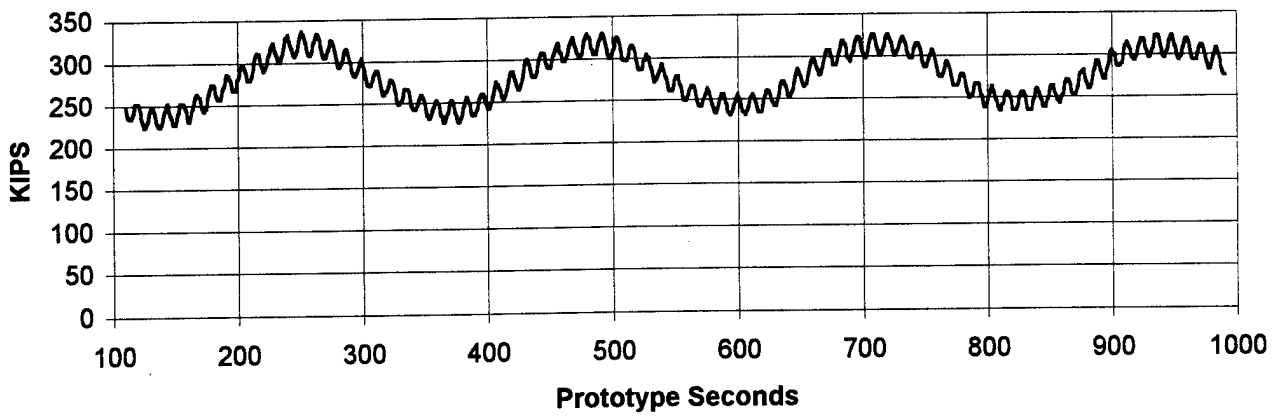

## Filtered Low Frequency Time History



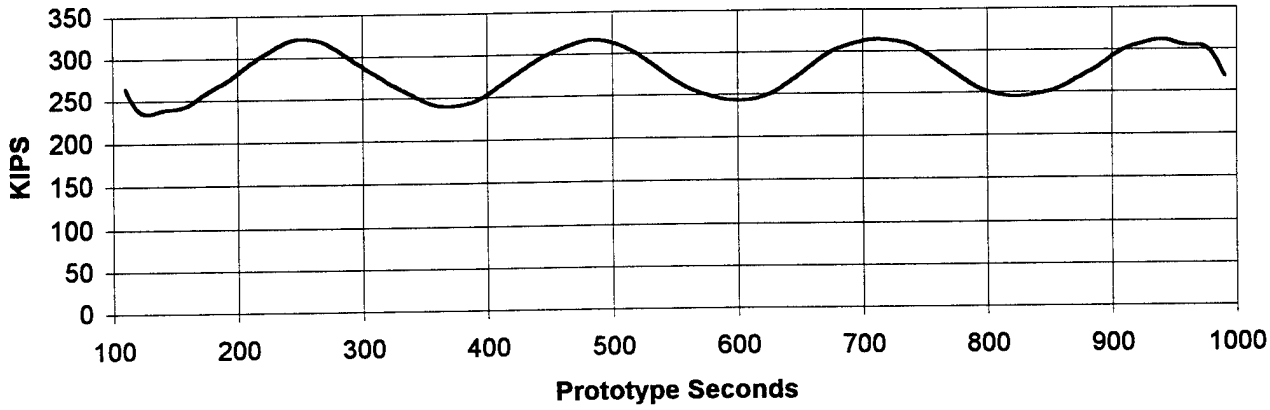

## Filtered High Frequency Time History



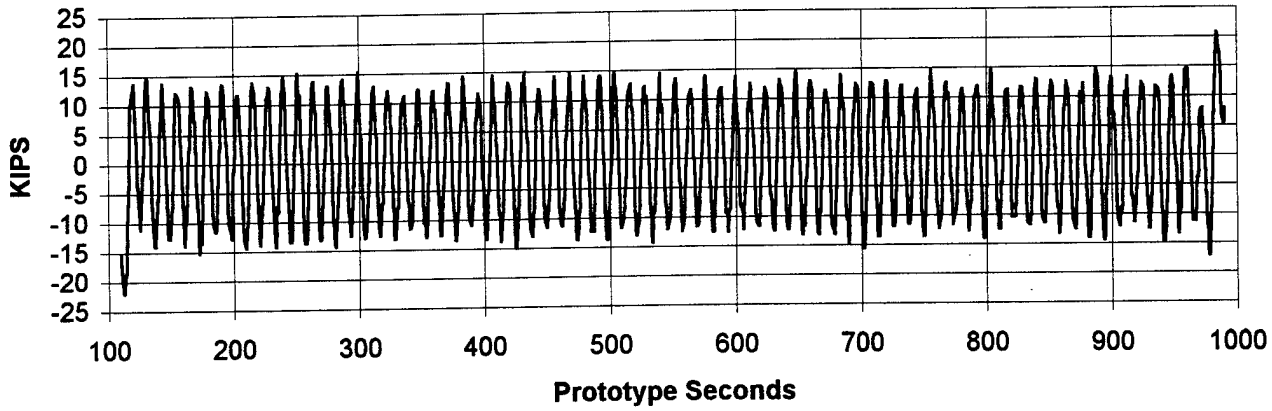
## Unfiltered Time History




## Filtered Low Frequency Time History

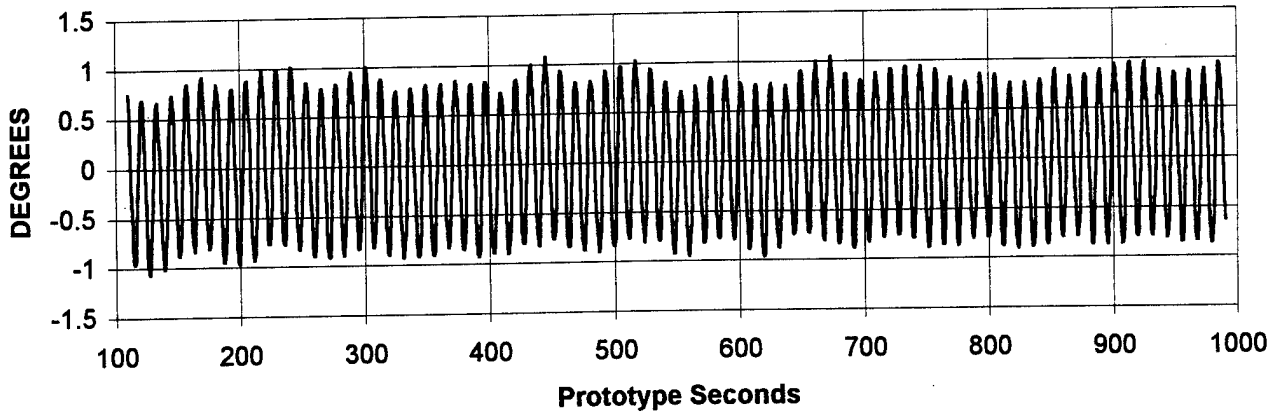



## Filtered High Frequency Time History

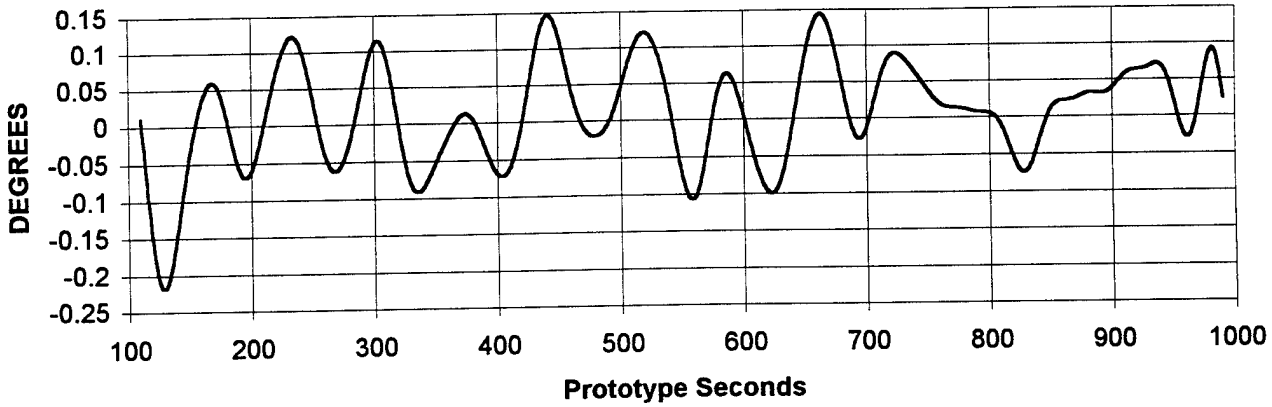


TEST A582 - PITCH

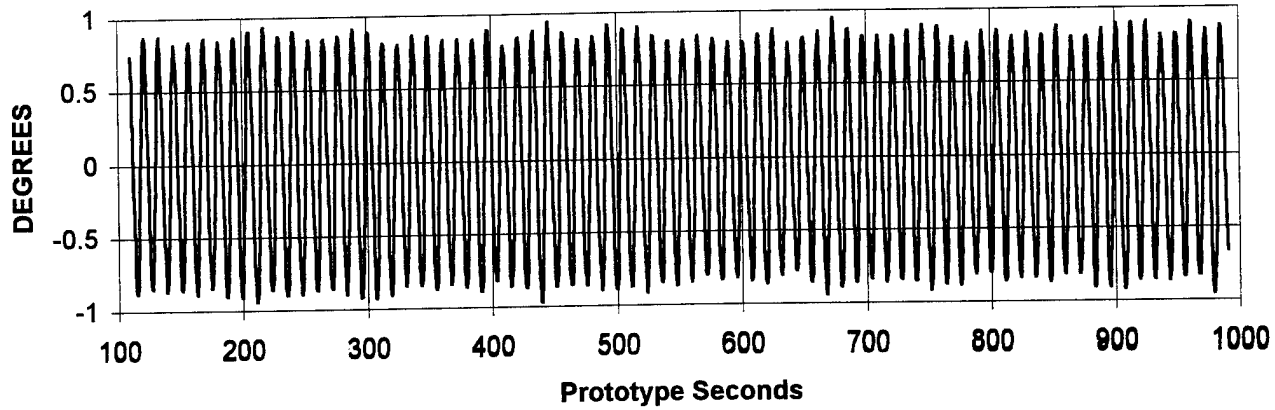
## Unfiltered Time History




## Filtered Low Frequency Time History

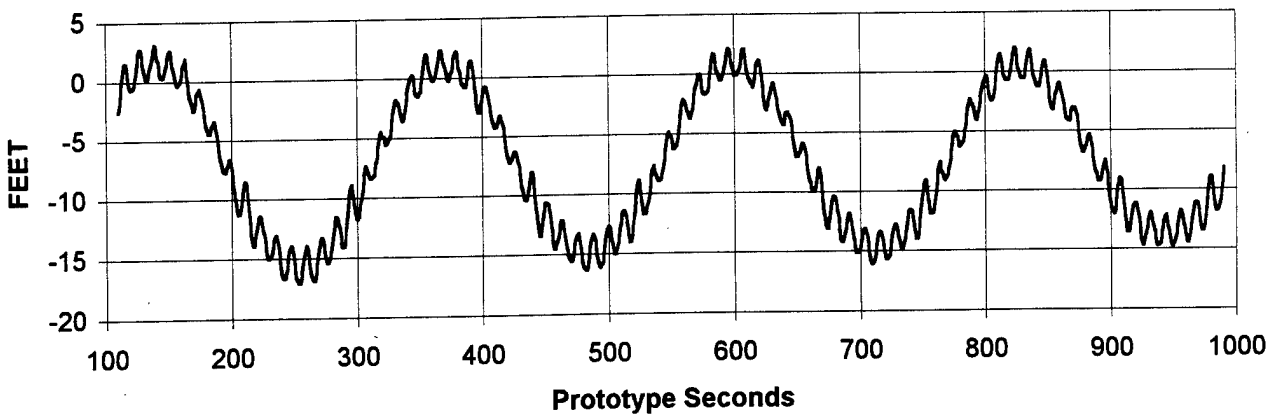



## Filtered High Frequency Time History

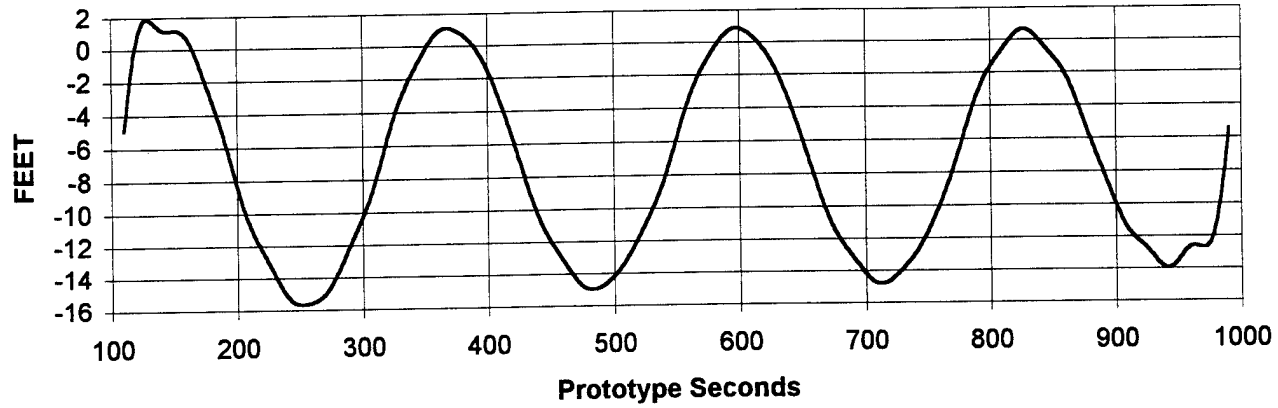


TEST A582 - PT SURGE

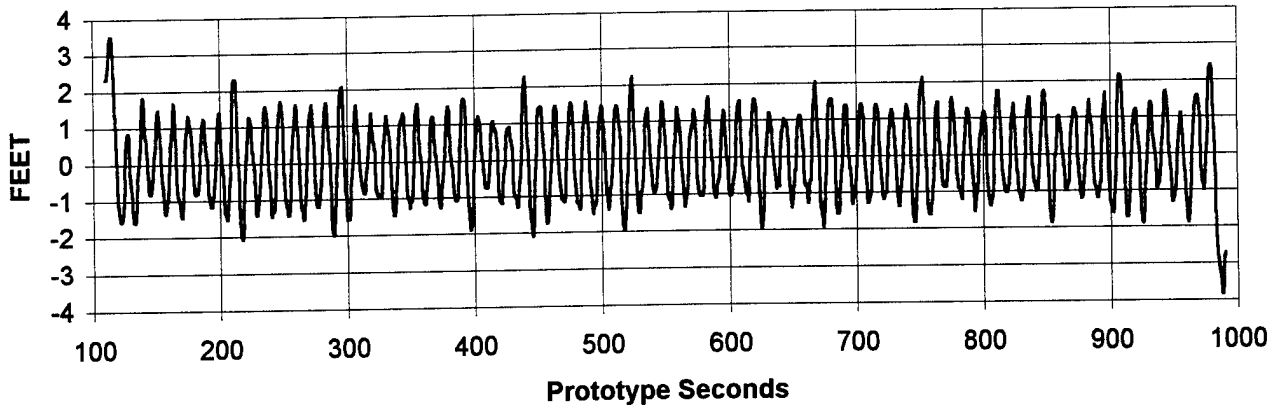
## Unfiltered Time History




## Filtered Low Frequency Time History

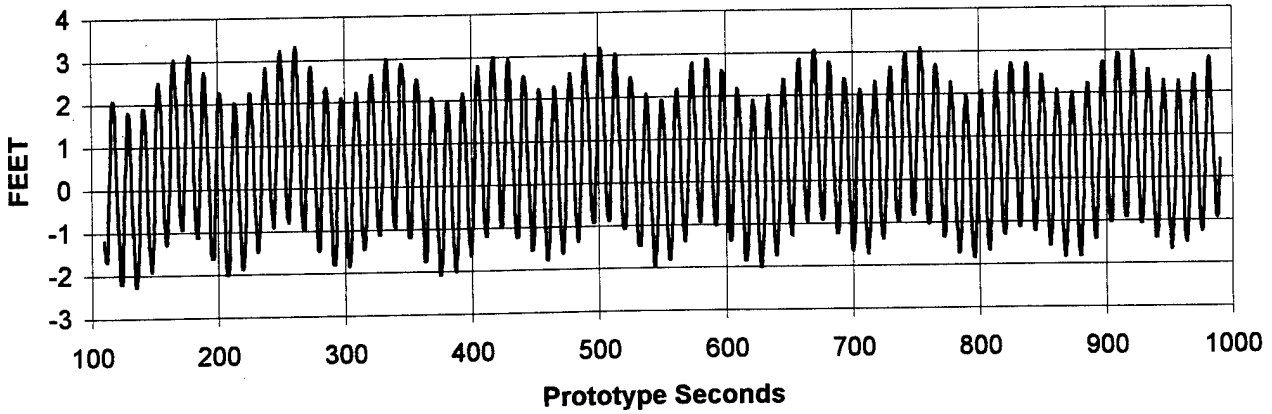



## Filtered High Frequency Time History

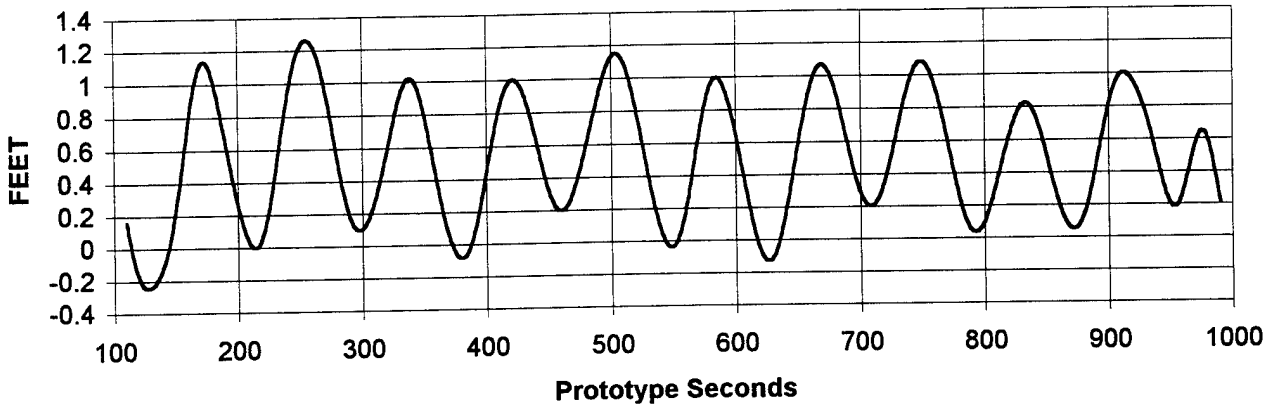


TEST A582 - PT HEAVE

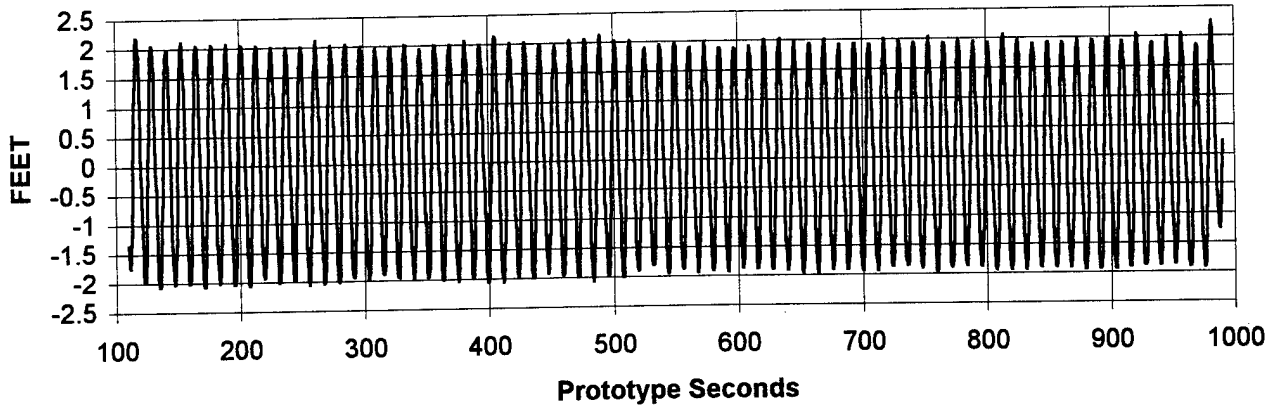
## Unfiltered Time History



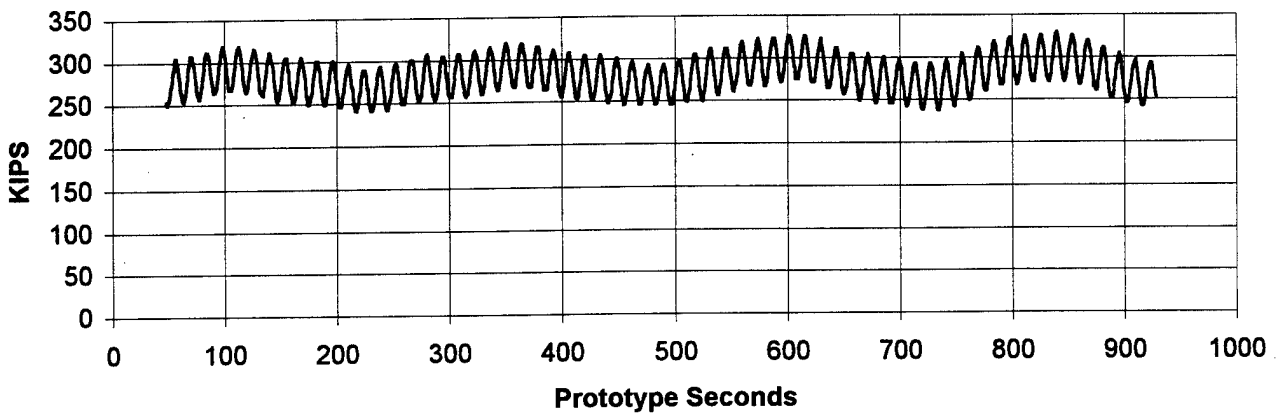

## Filtered Low Frequency Time History



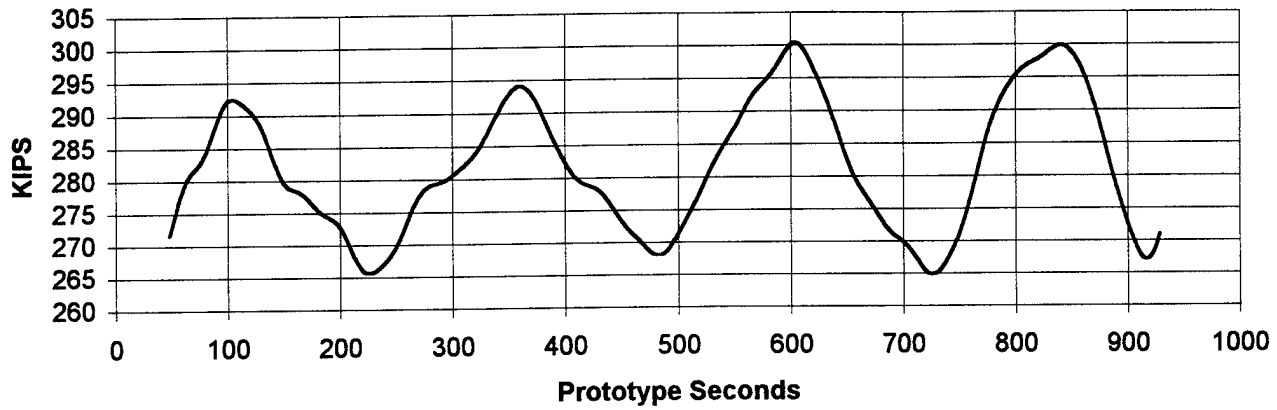

## Filtered High Frequency Time History



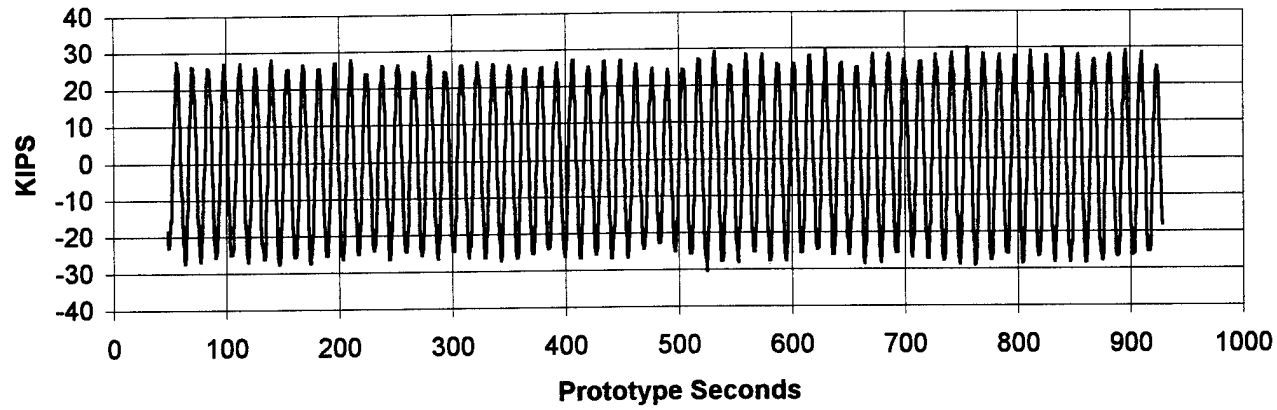
## Unfiltered Time History



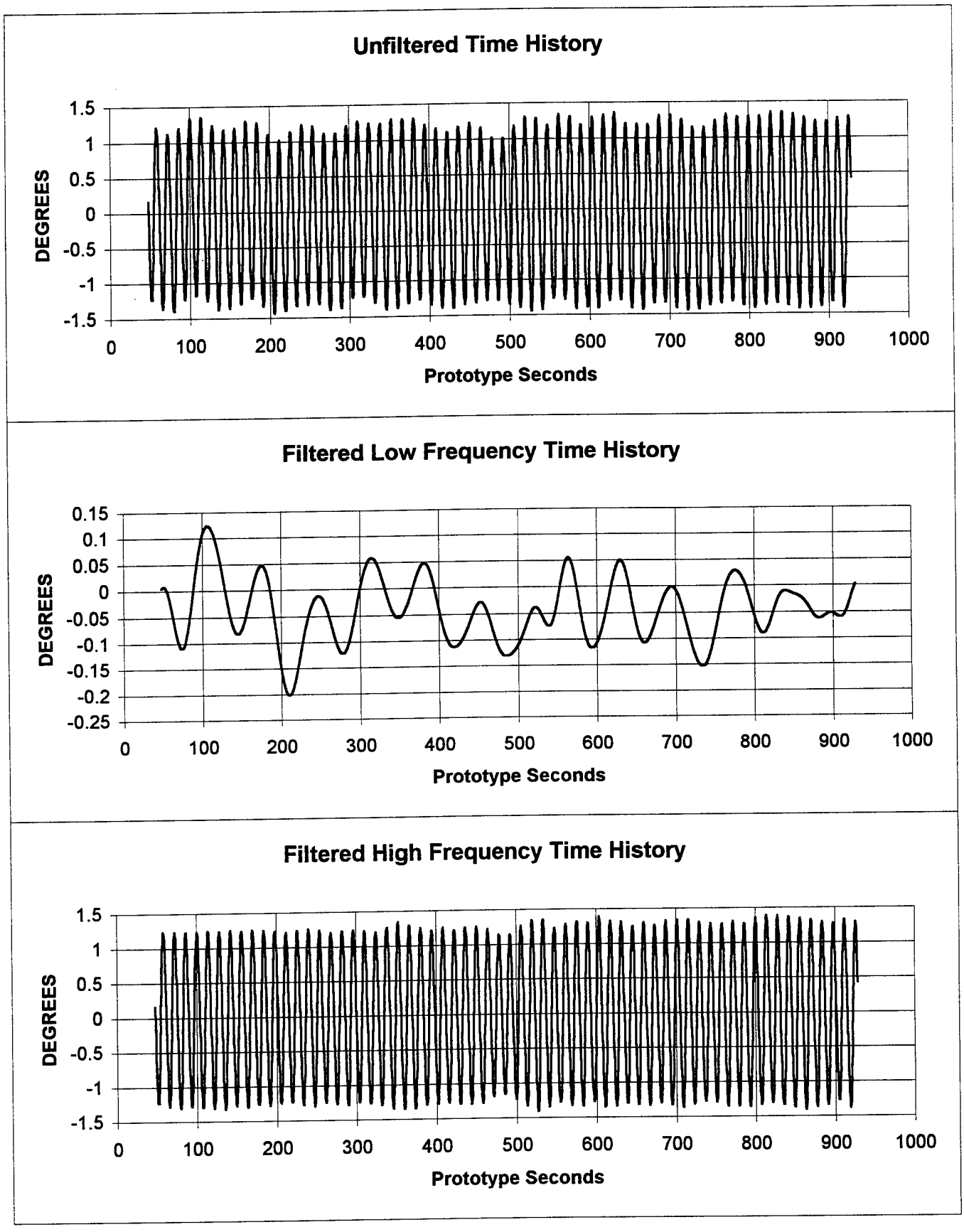

## Filtered Low Frequency Time History




## Filtered High Frequency Time History

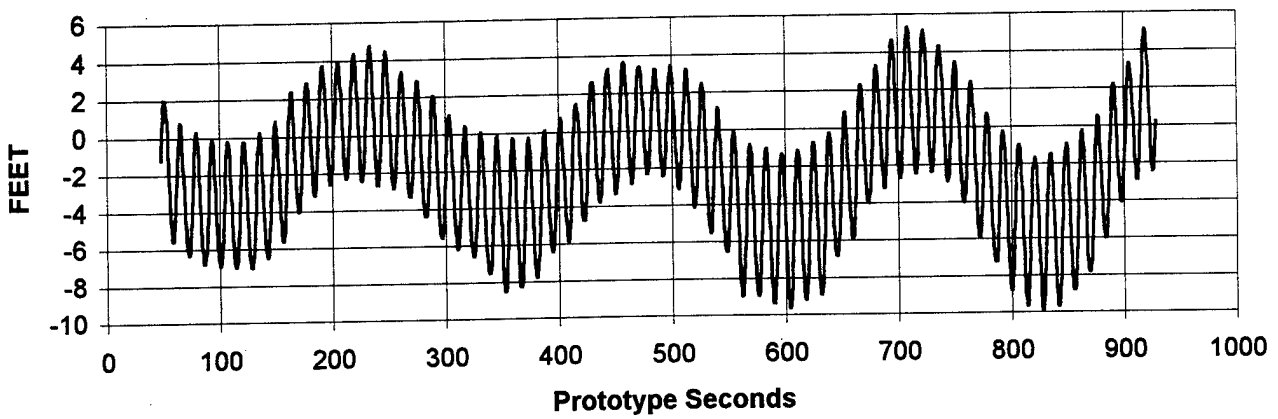


TEST A583 - PITCH

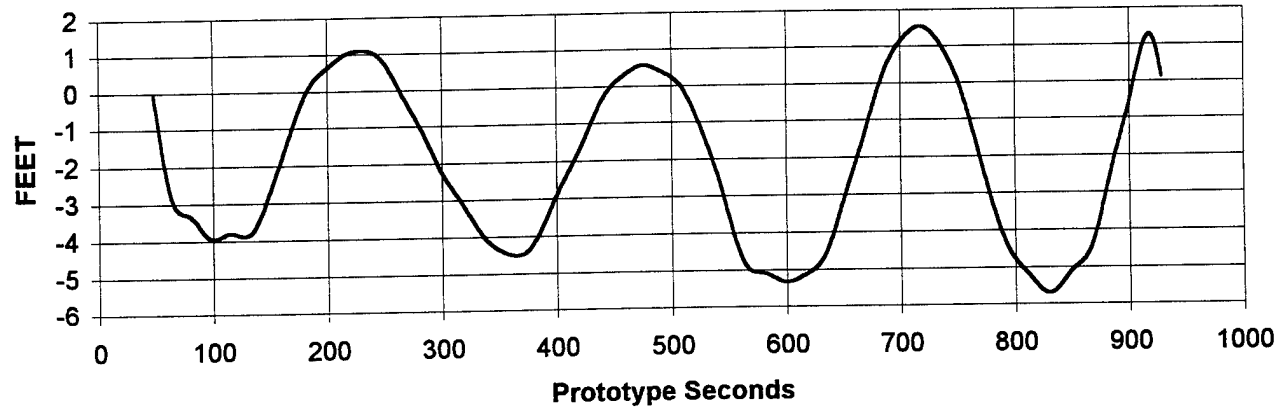


TEST A583 - PT SURGE

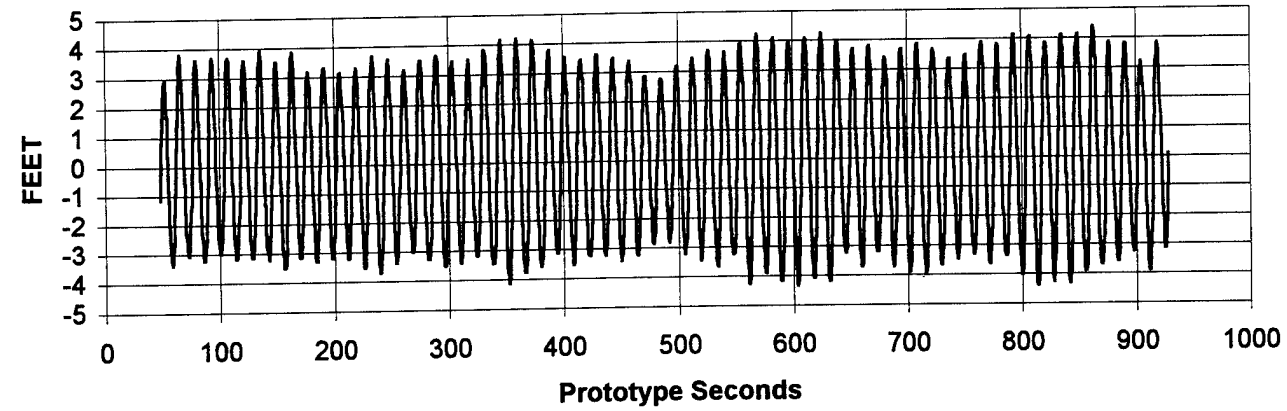
## Unfiltered Time History



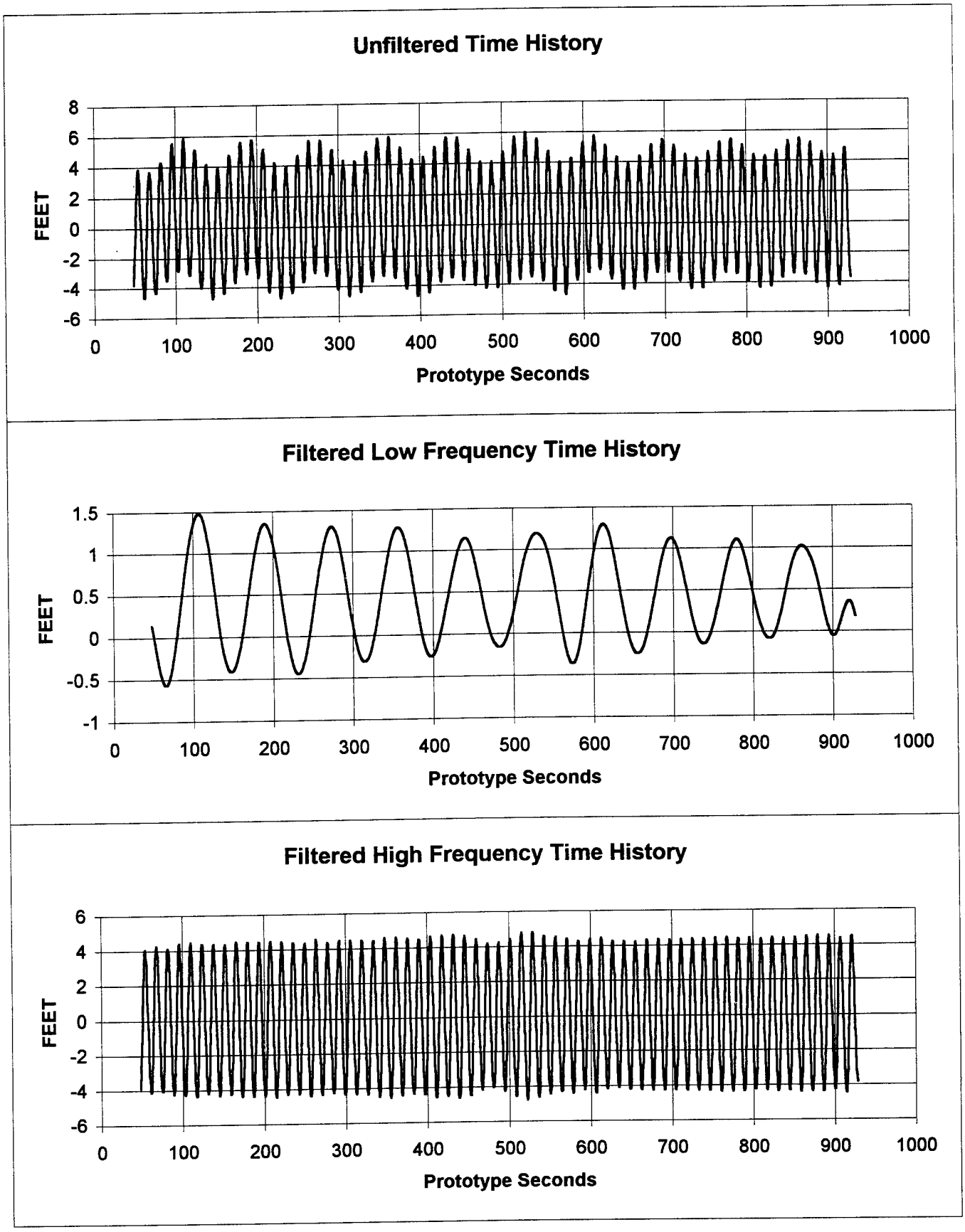

## Filtered Low Frequency Time History

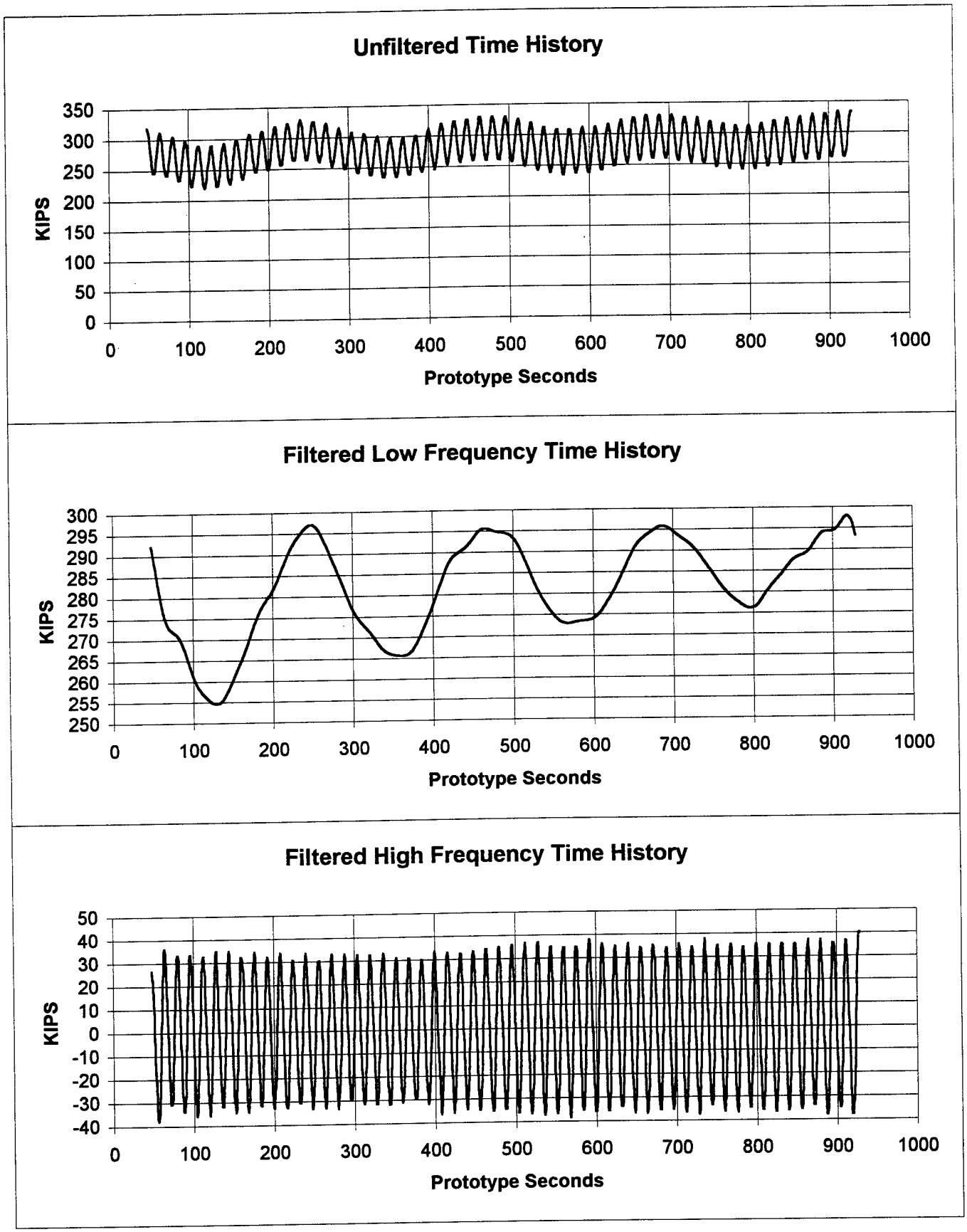



## Filtered High Frequency Time History

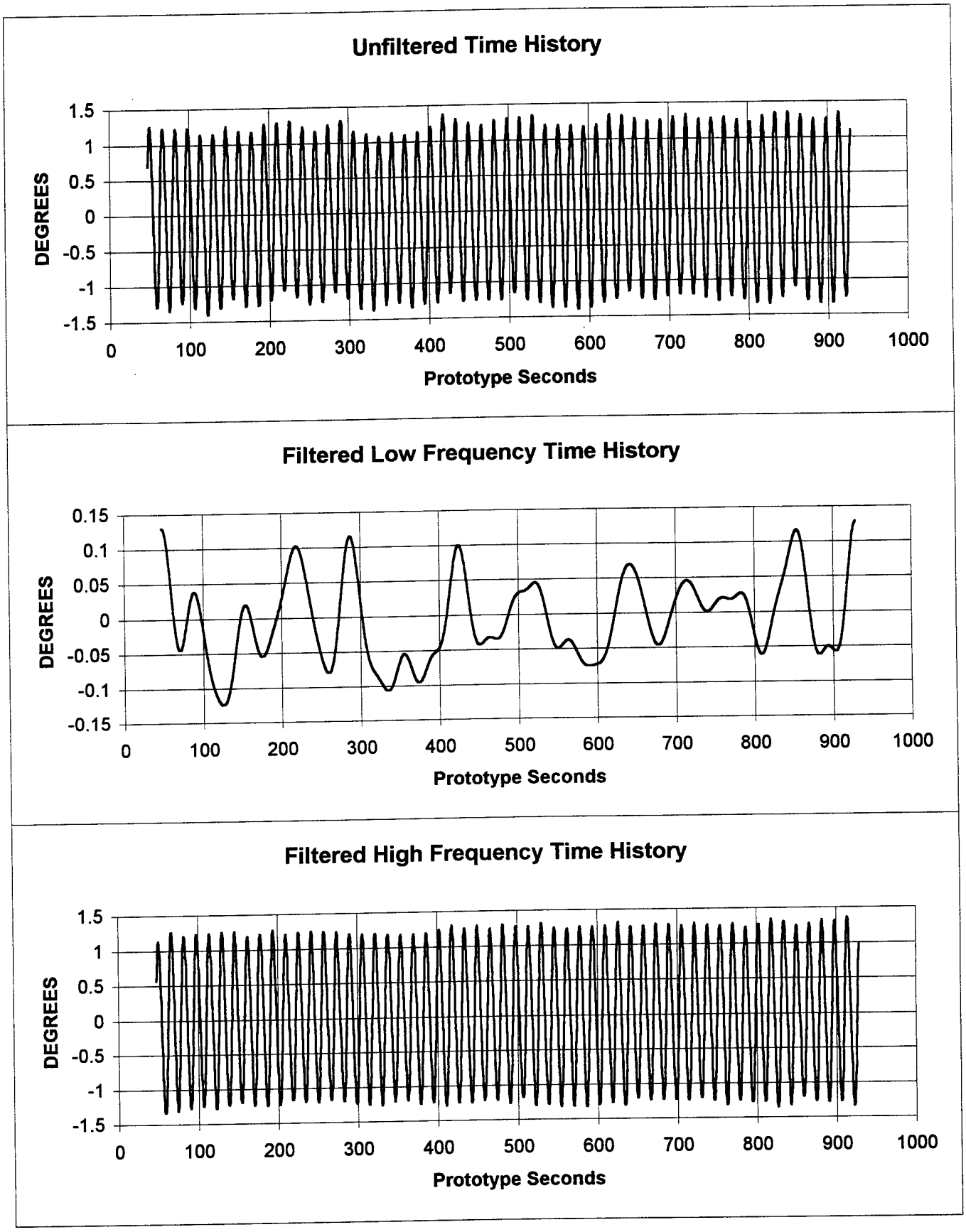


TEST A583 - PT HEAVE



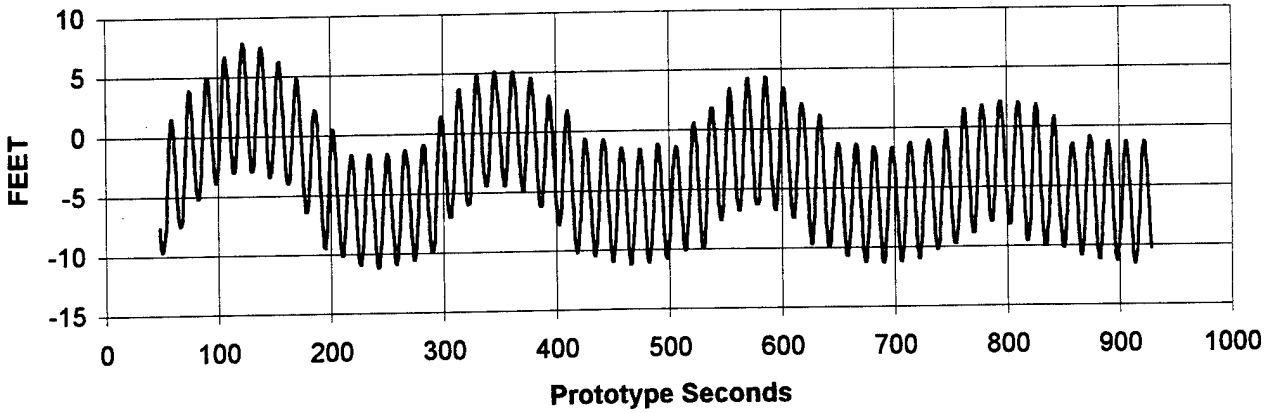

Unfiltered Time History
KIPS
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered Low Frequency Time History
KIPS
300
295
290
285
280
275
270
265
260
255
250
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds
Filtered High Frequency Time History
KIPS
50
40
30
20
10
0
-10
-20
-30
-40
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

TEST A584 - PITCH

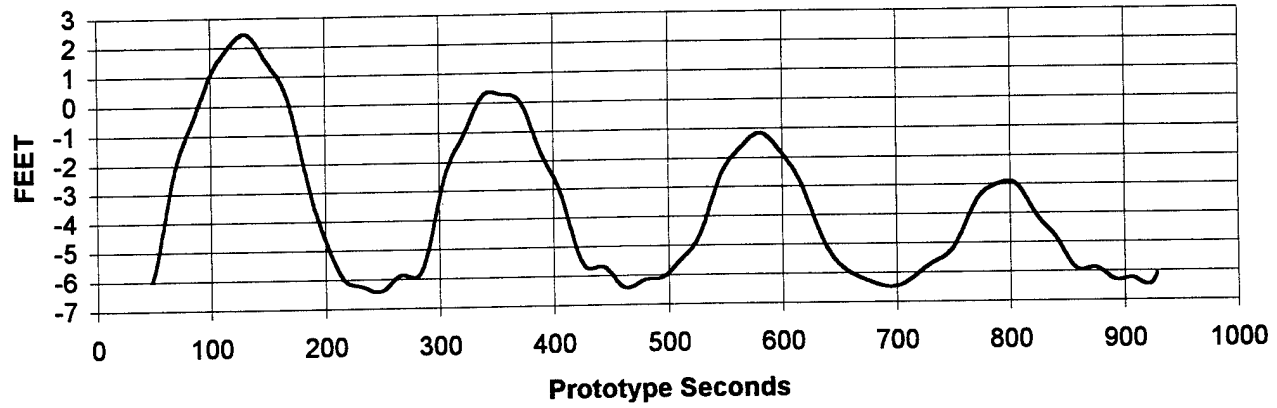


TEST A584 - PT SURGE

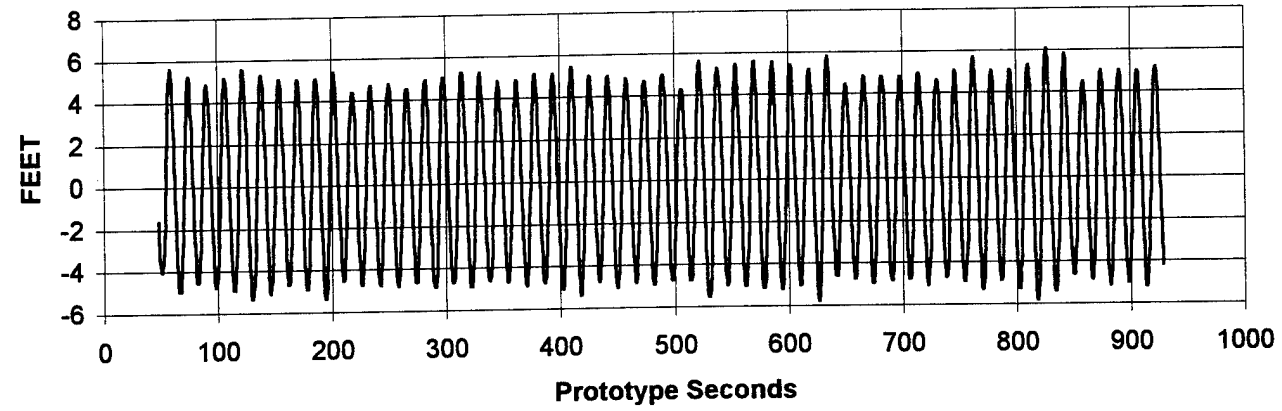
## Unfiltered Time History




## Filtered Low Frequency Time History

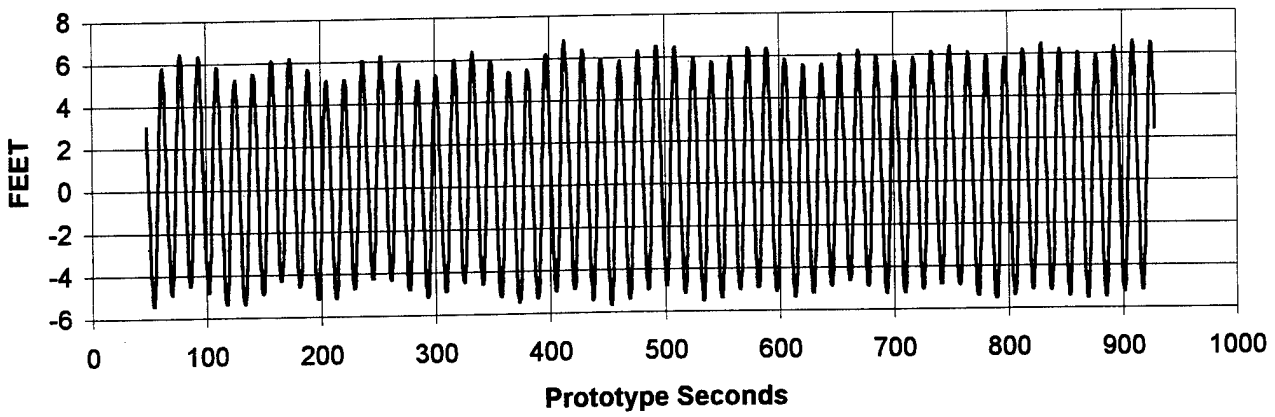



## Filtered High Frequency Time History

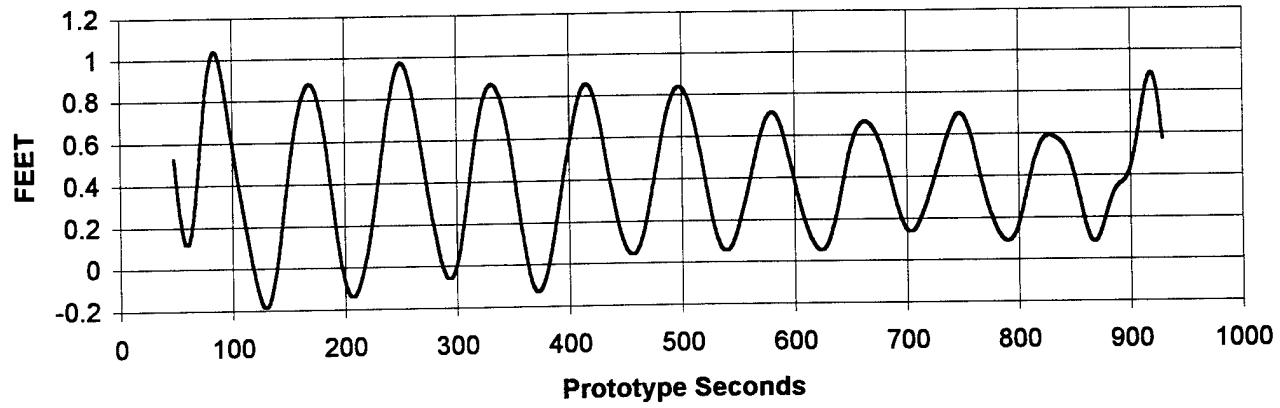


TEST A584 - PT HEAVE

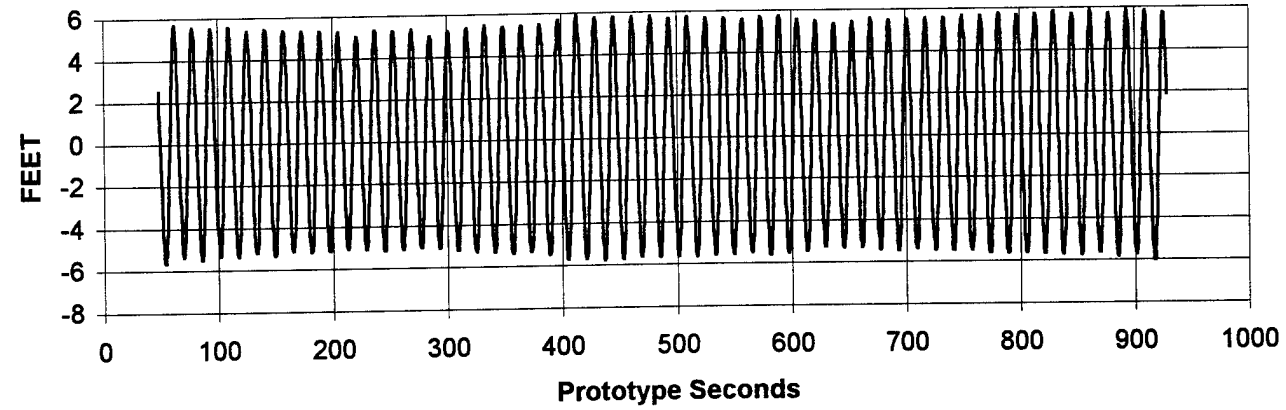
## Unfiltered Time History

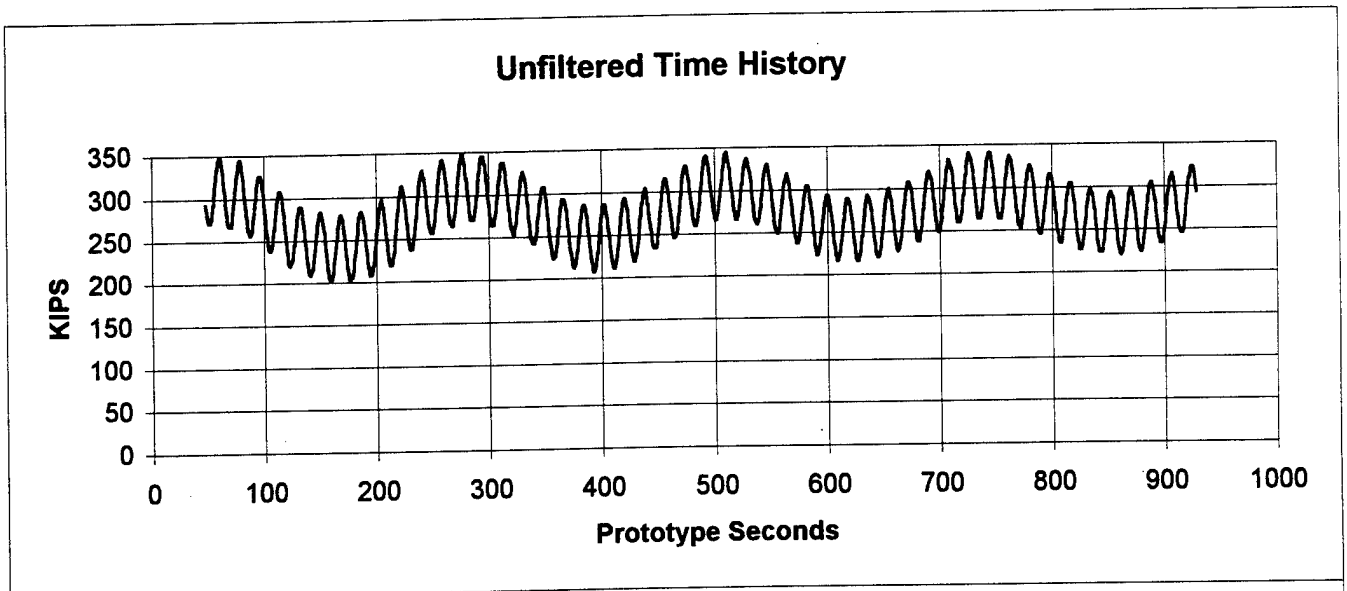


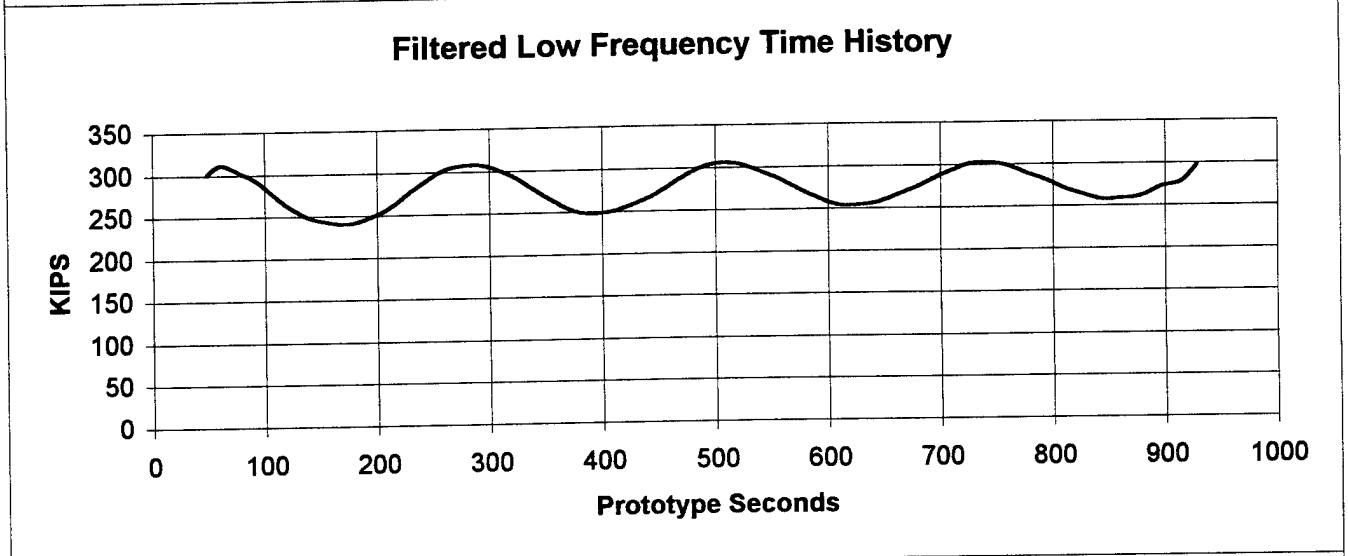

## Filtered Low Frequency Time History

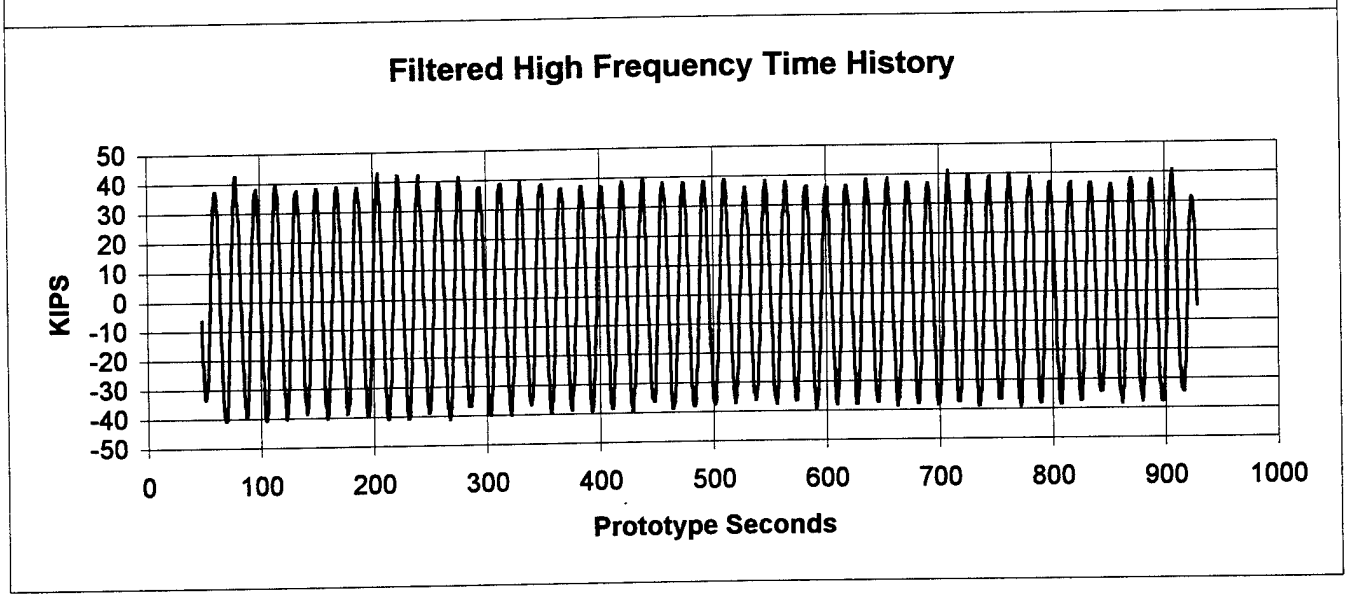



## Filtered High Frequency Time History

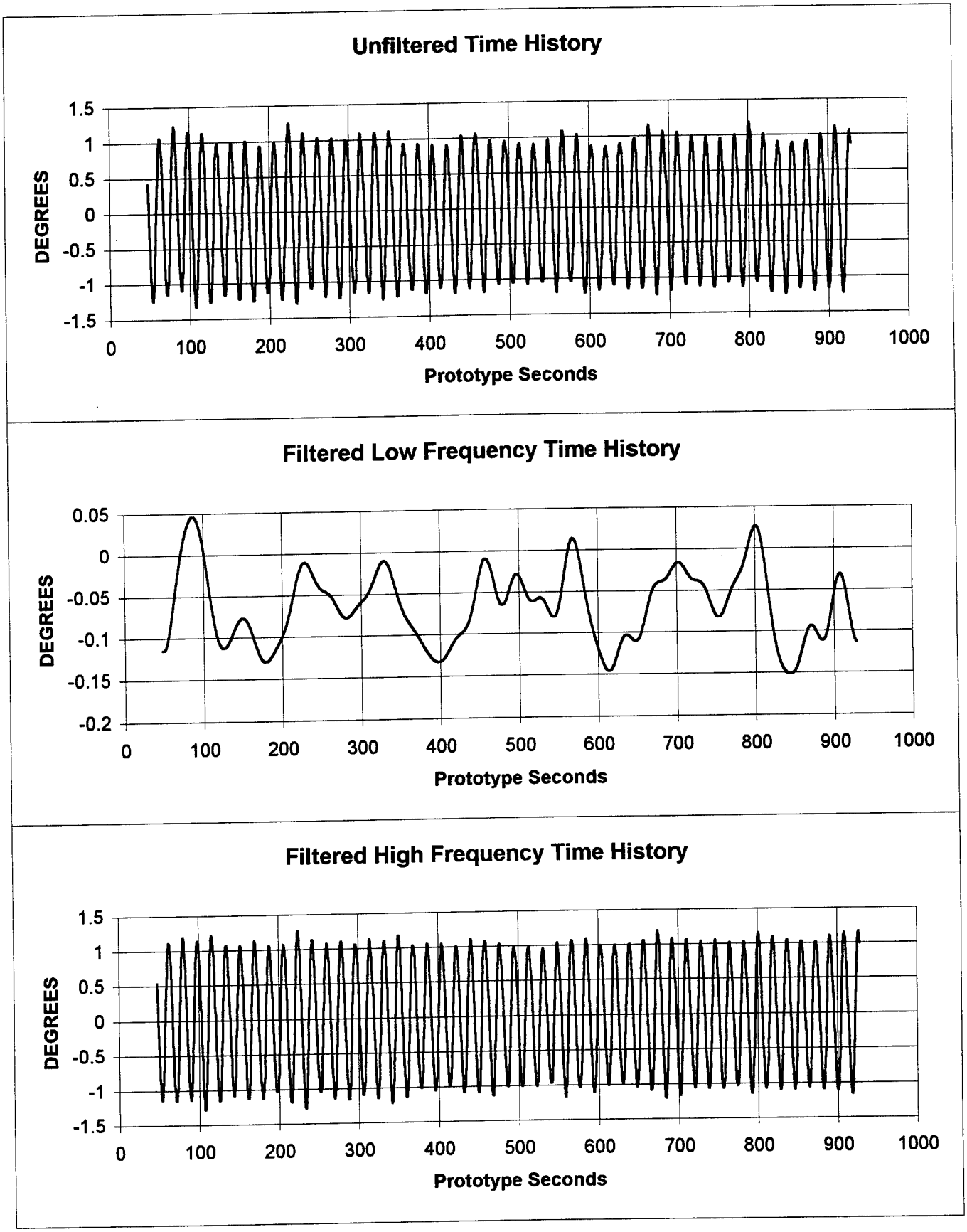



Unfiltered Time History
KIPS
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds


Filtered Low Frequency Time History
KIPS
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

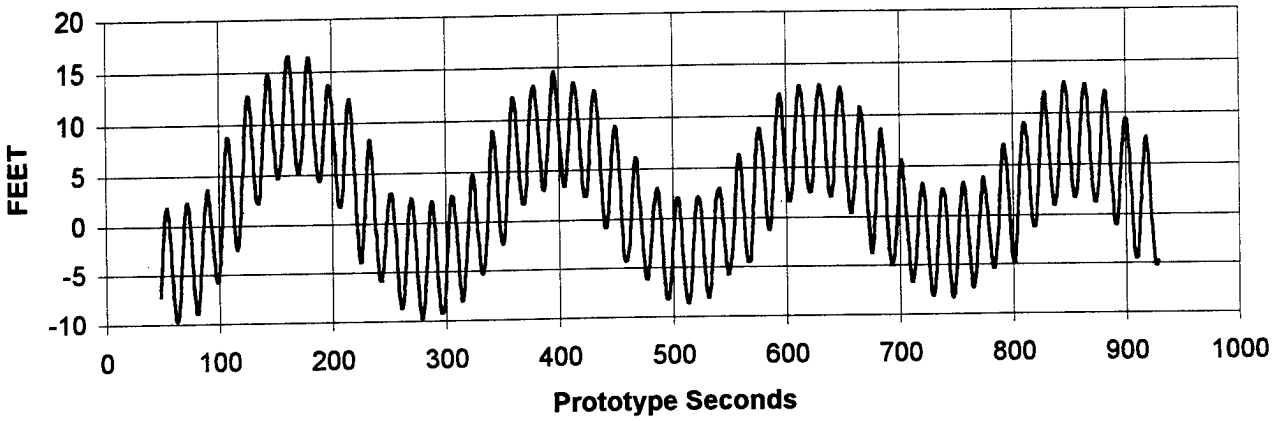

Filtered High Frequency Time History
KIPS
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40
30
20
10
0
-10
-20
-30
-40
-50
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

TEST A585 - PITCH

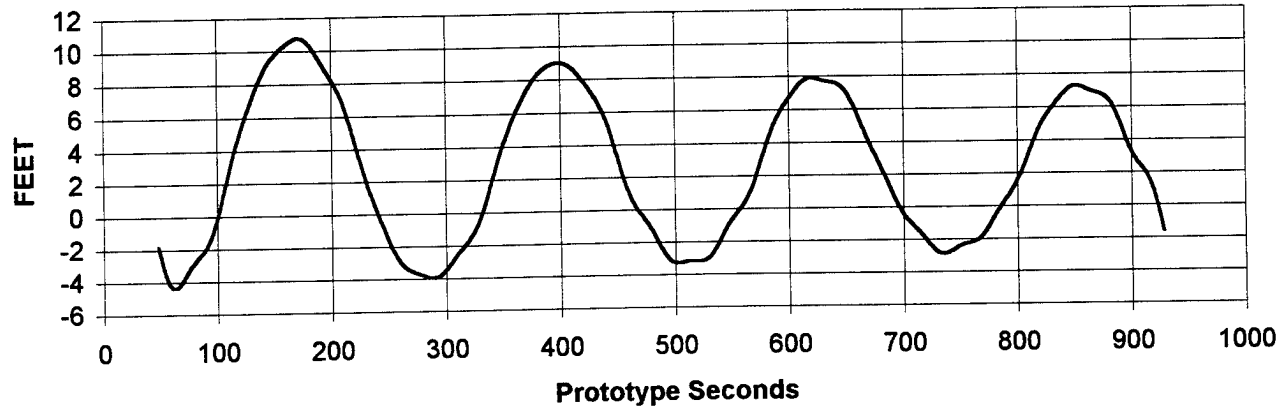


TEST A585 - PT SURGE

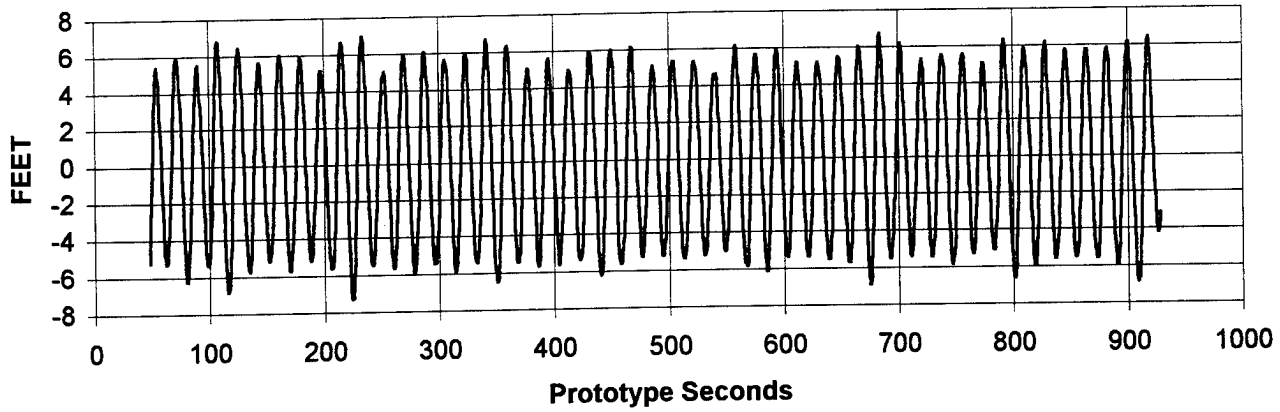
## Unfiltered Time History



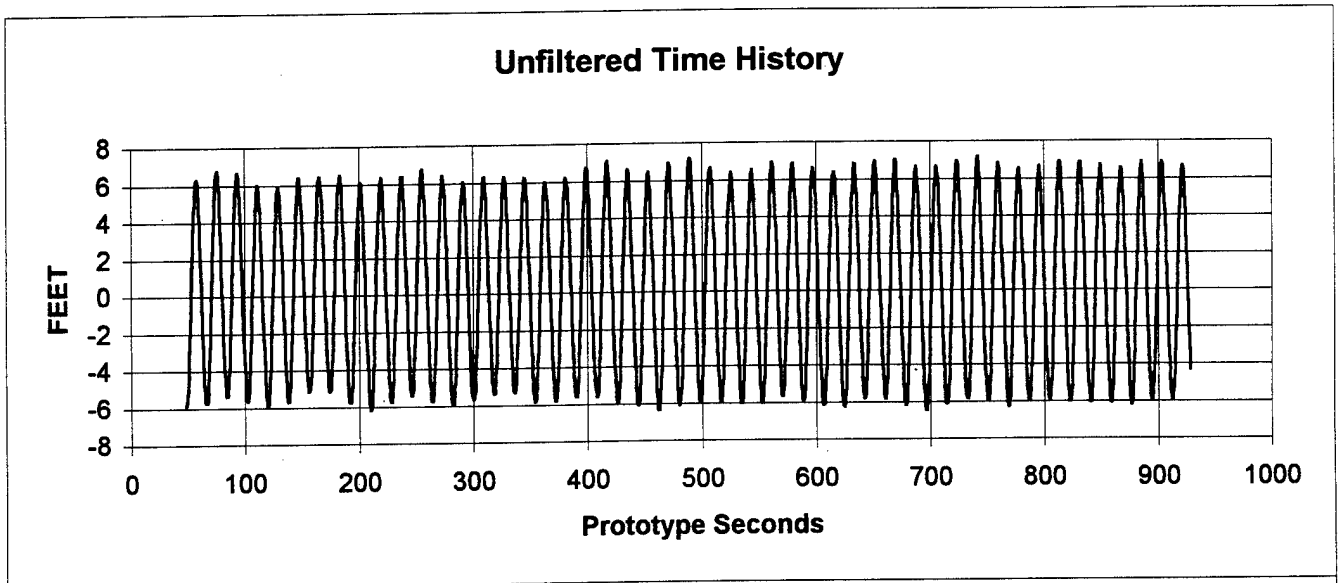

## Filtered Low Frequency Time History

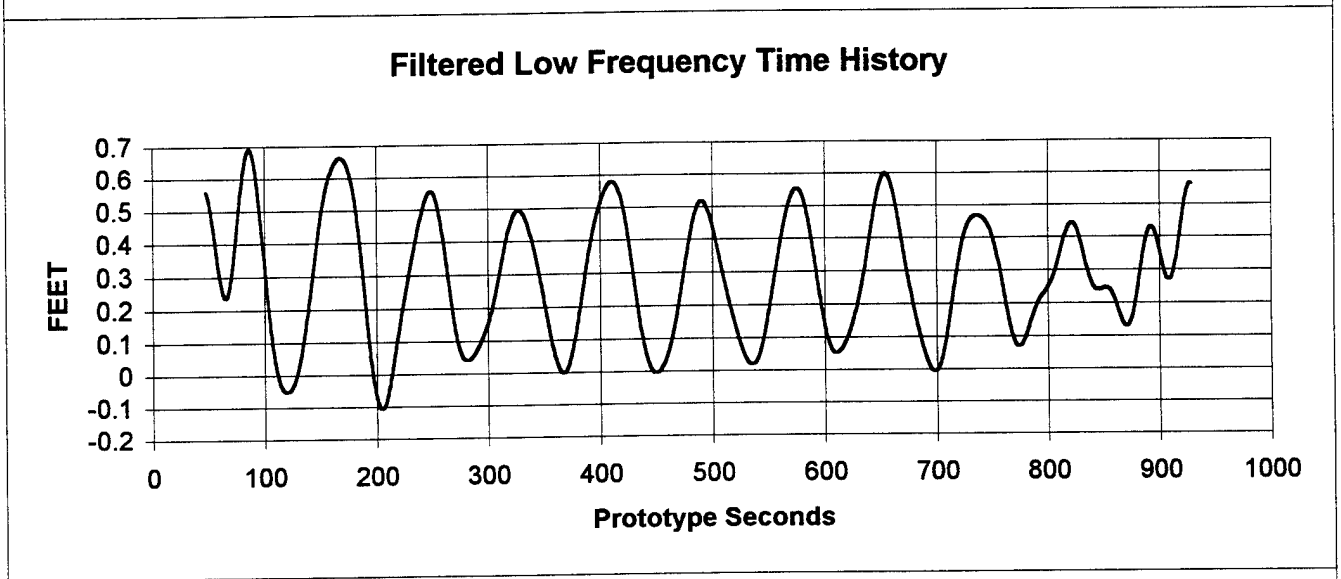


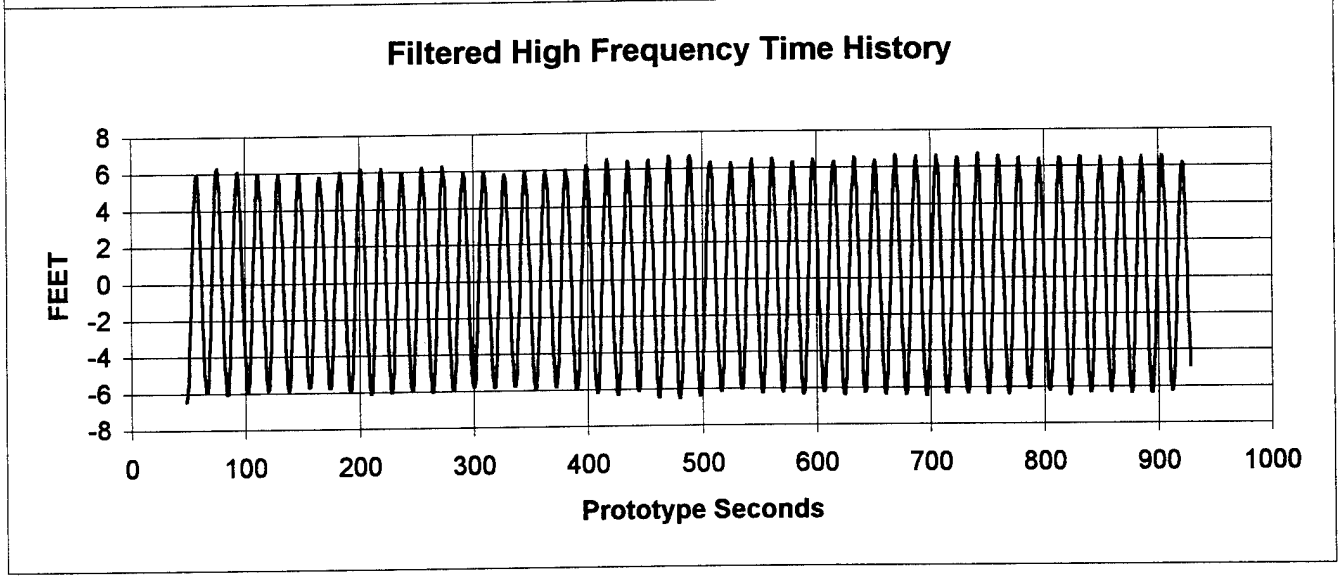

## Filtered High Frequency Time History



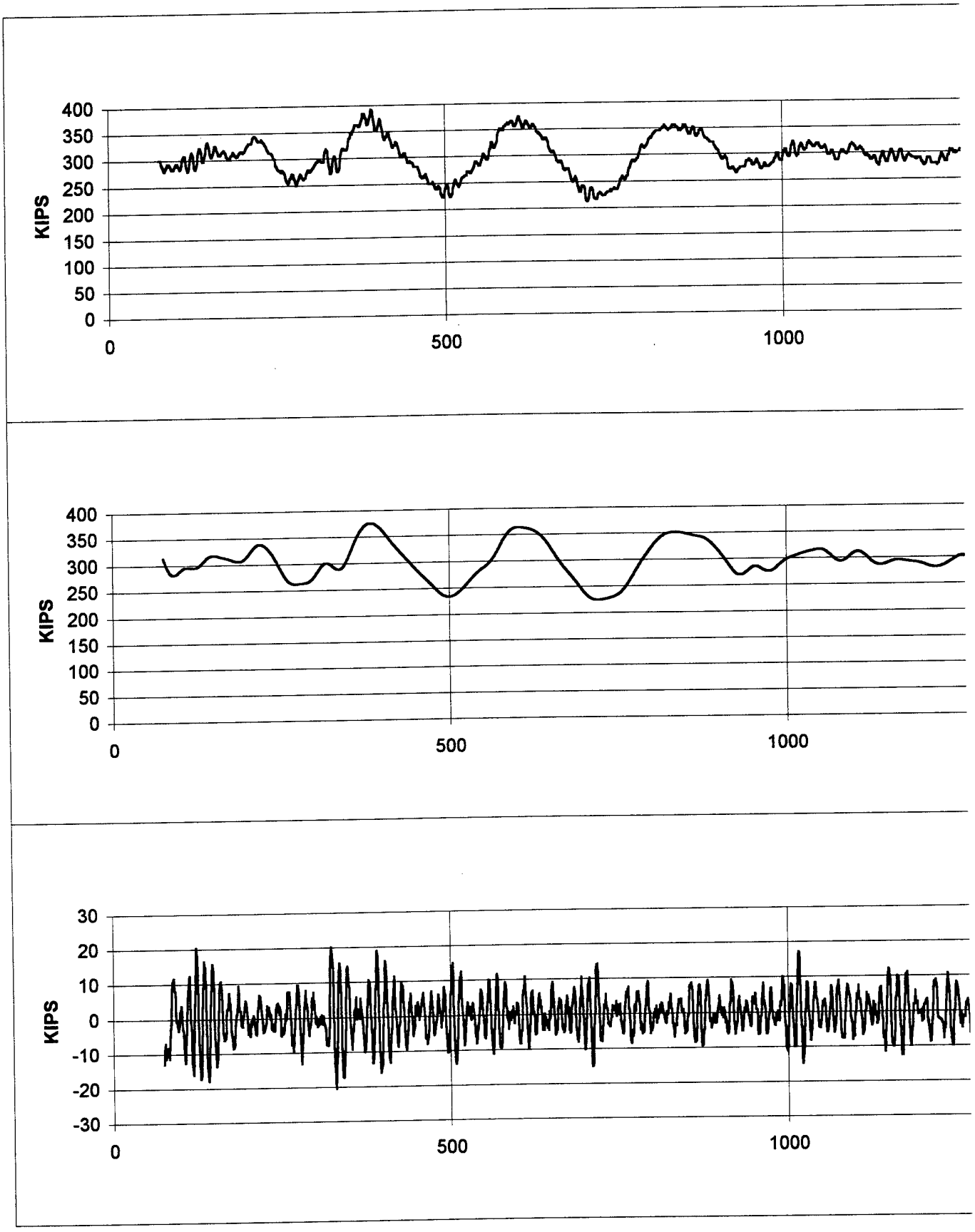
TEST A585 - PT HEAVE



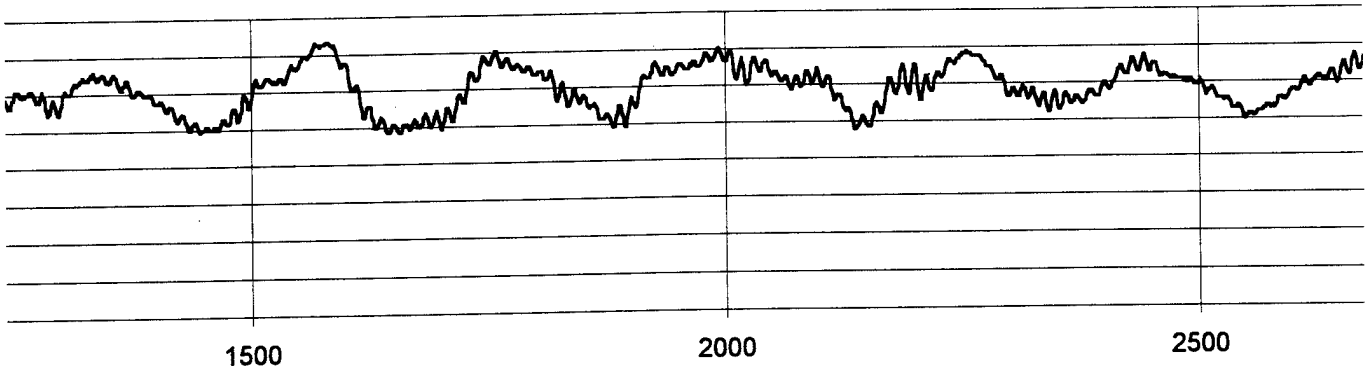



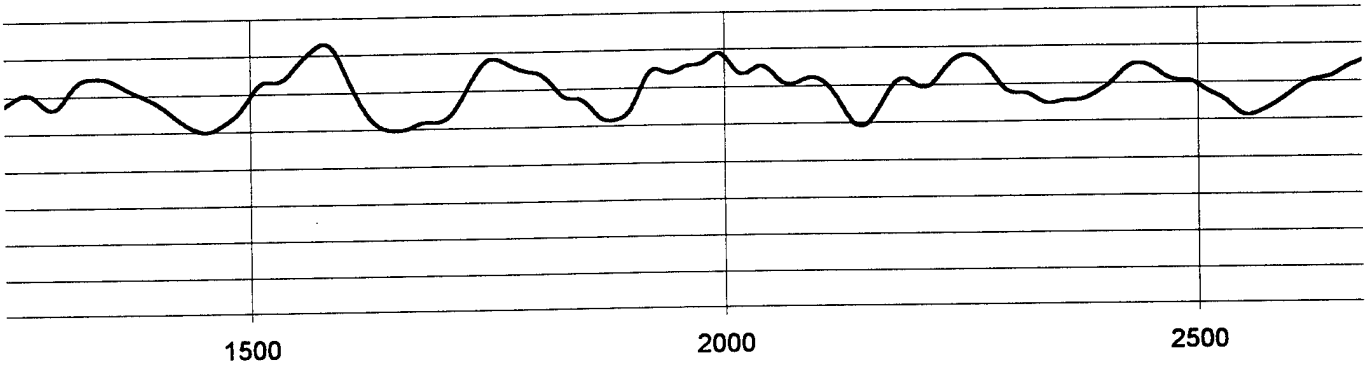
TEST A586 - ML_1



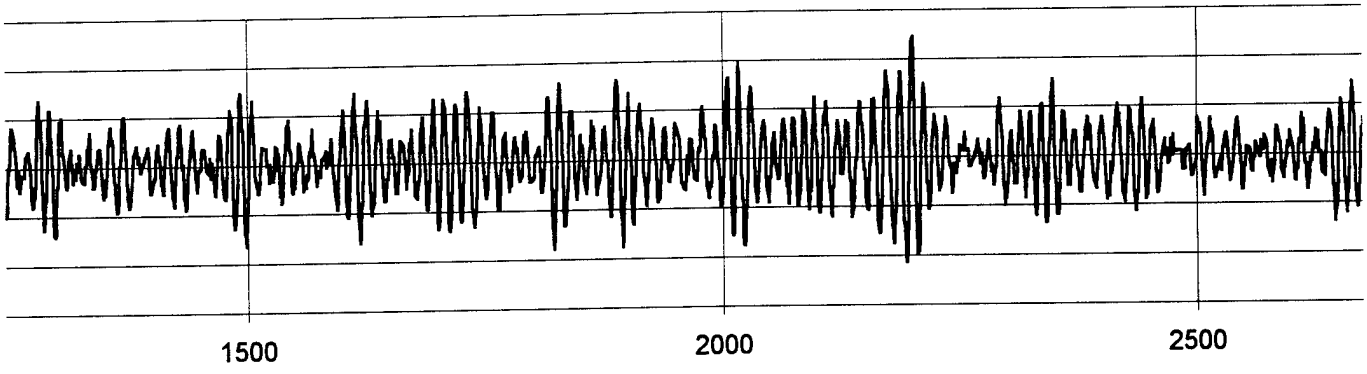
## Unfiltered Time History



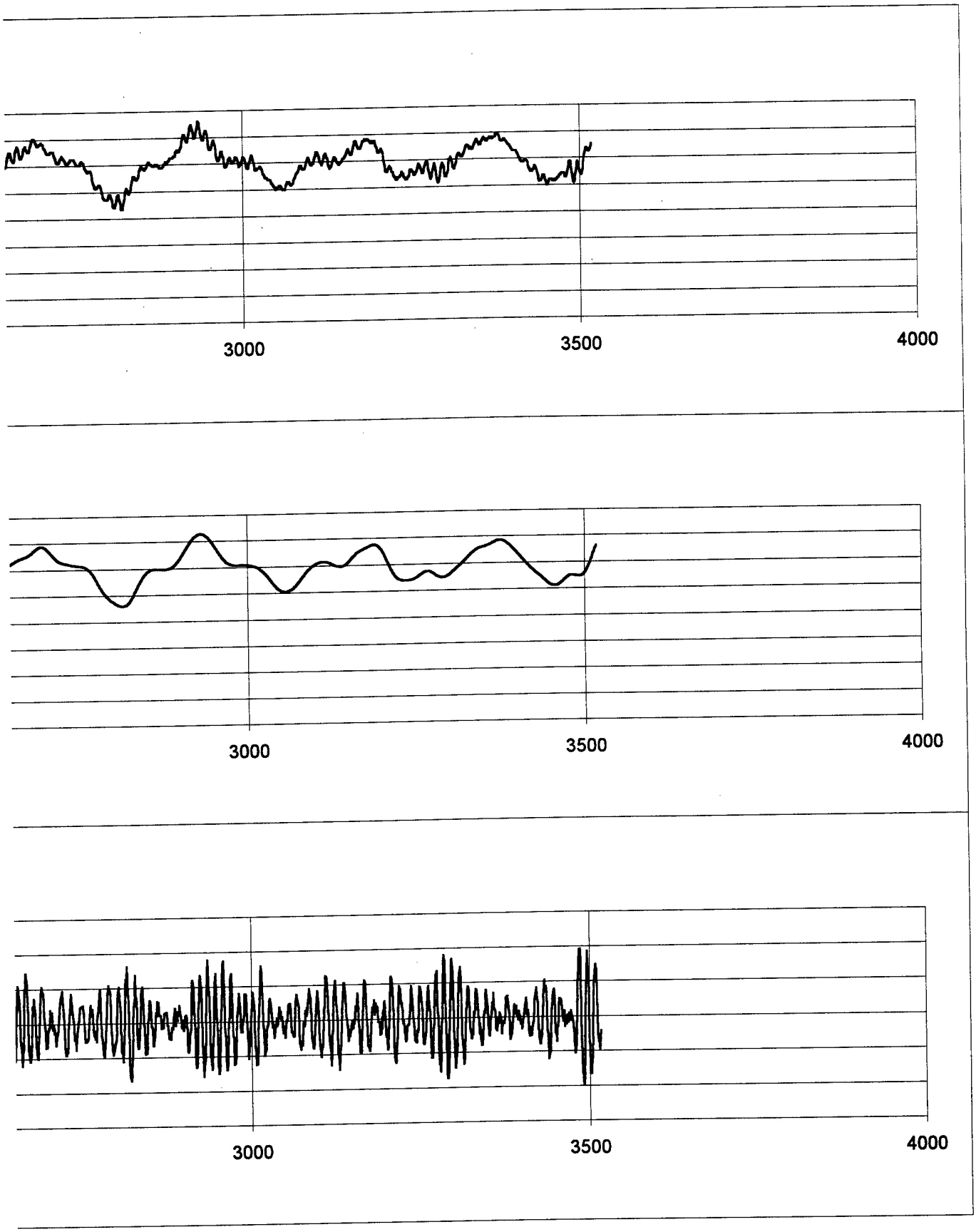

## Filtered Low Frequency Time History



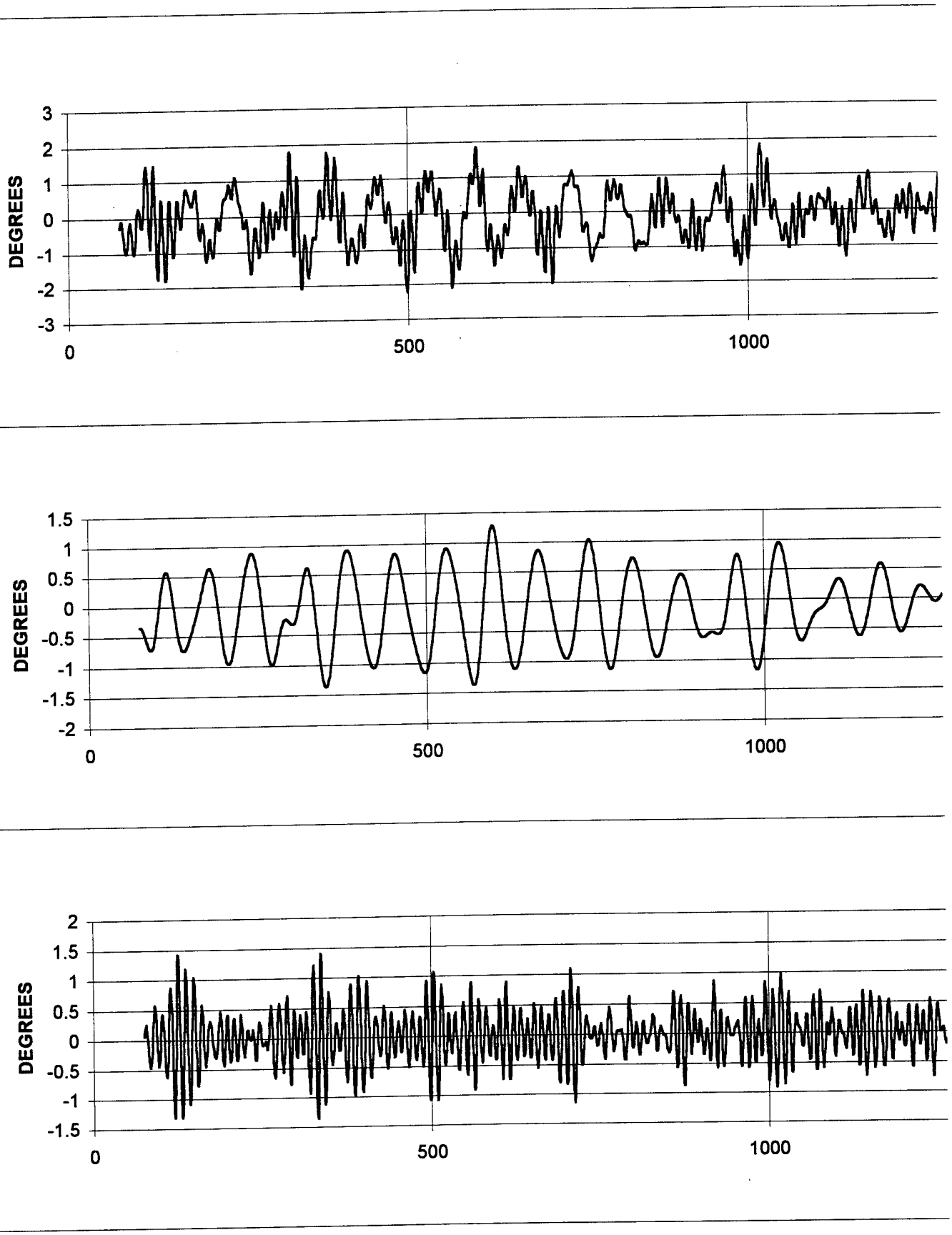

## Filtered High Frequency Time History



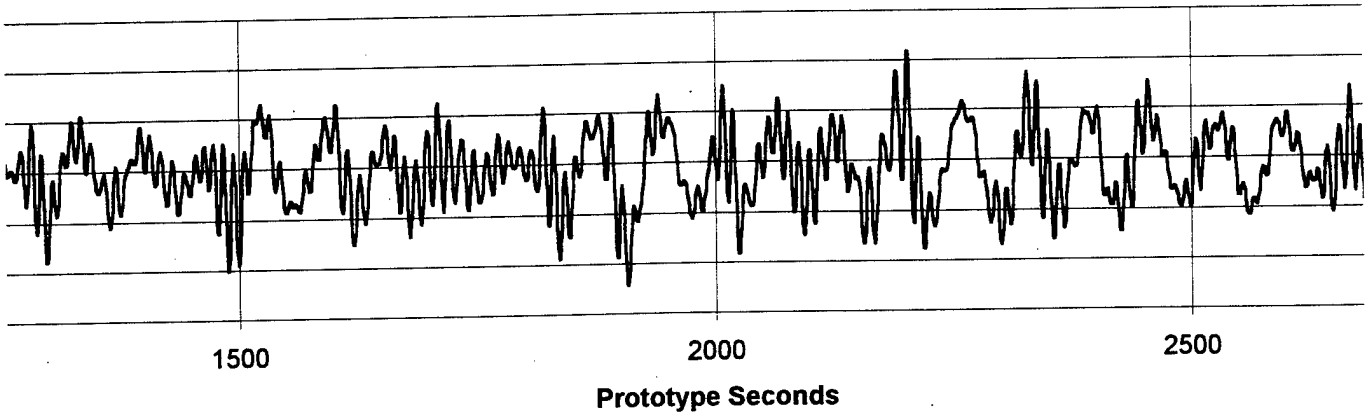
TEST A586 - ML_1



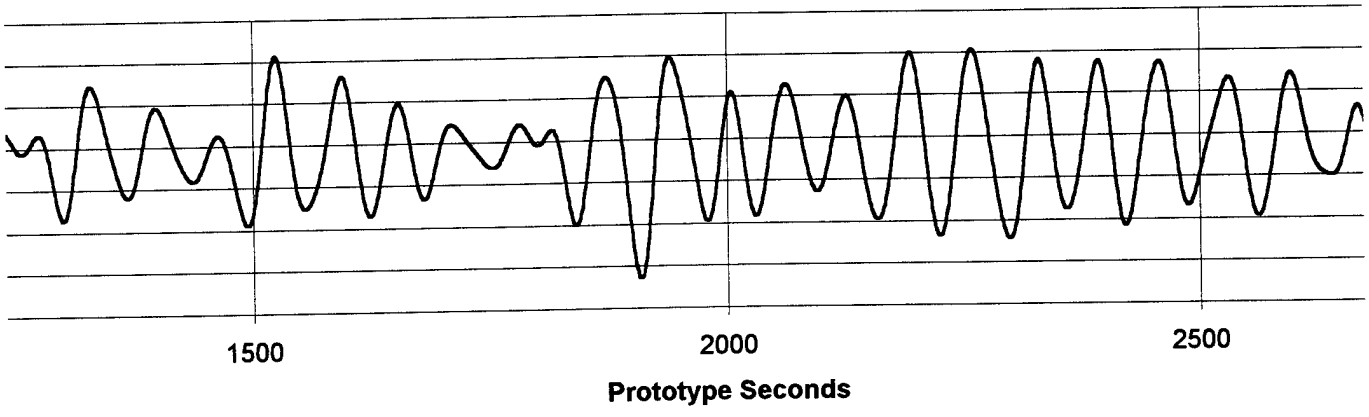
TEST A586 - PITCH



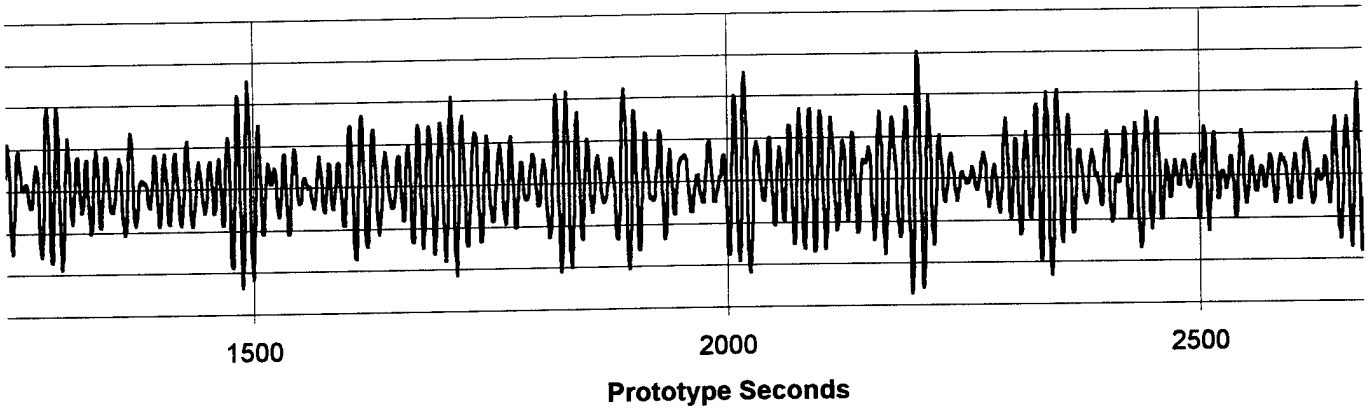
## Unfiltered Time History



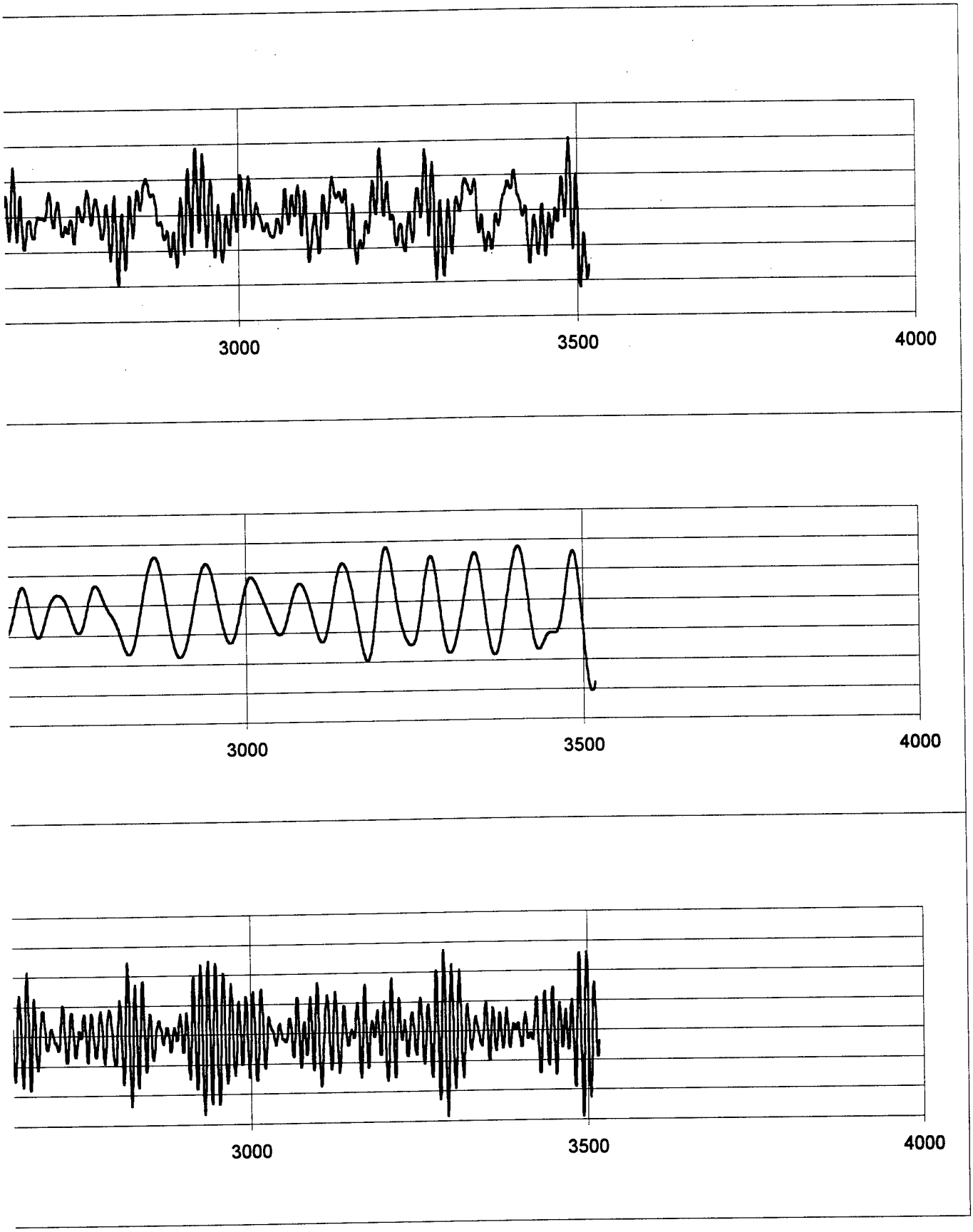

## Filtered Low Frequency Time History



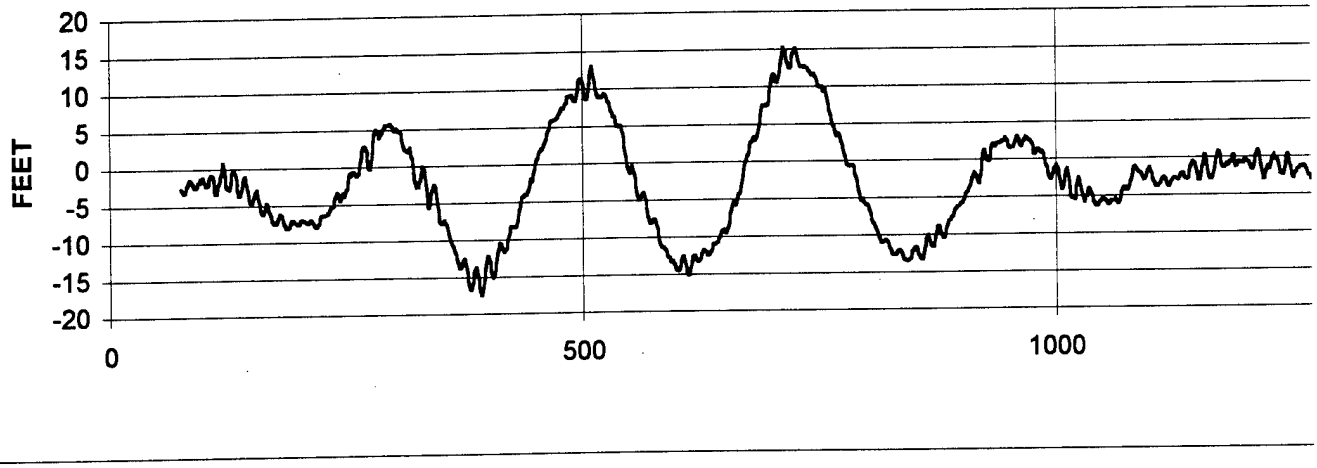

## Filtered High Frequency Time History

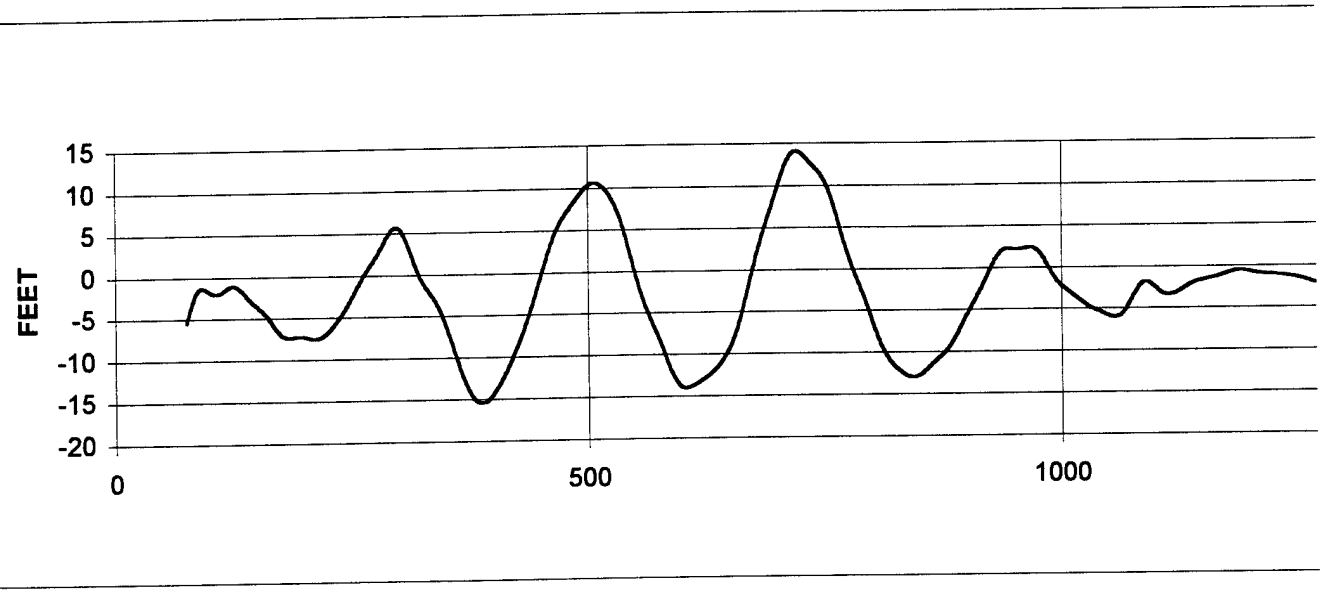


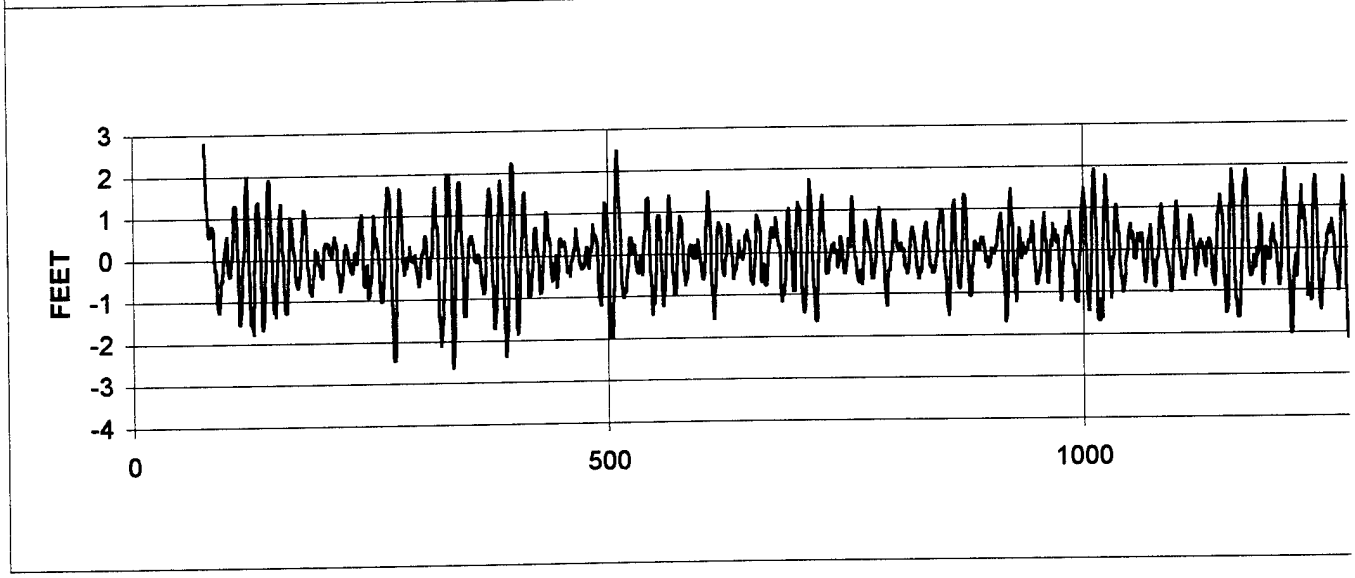
TEST A586 - PITCH



TEST A586 - PT SURGE

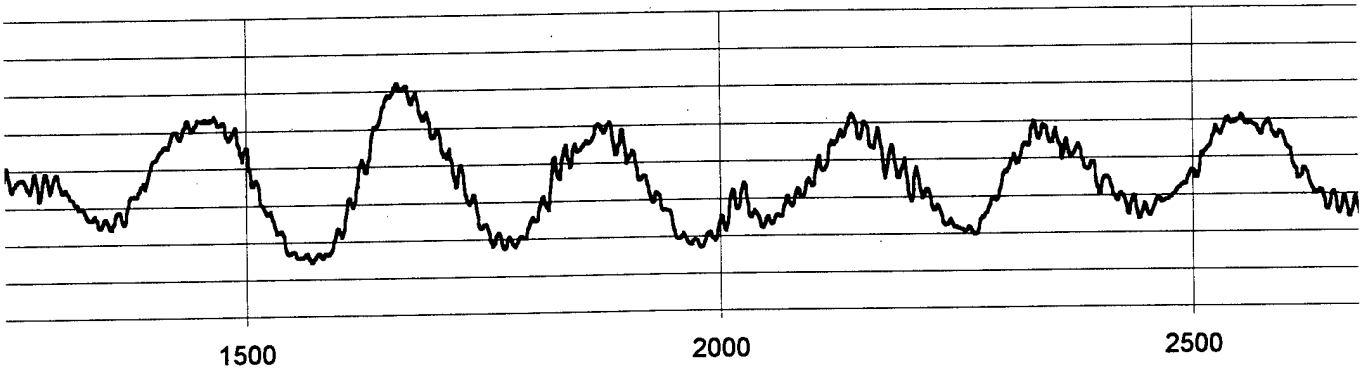


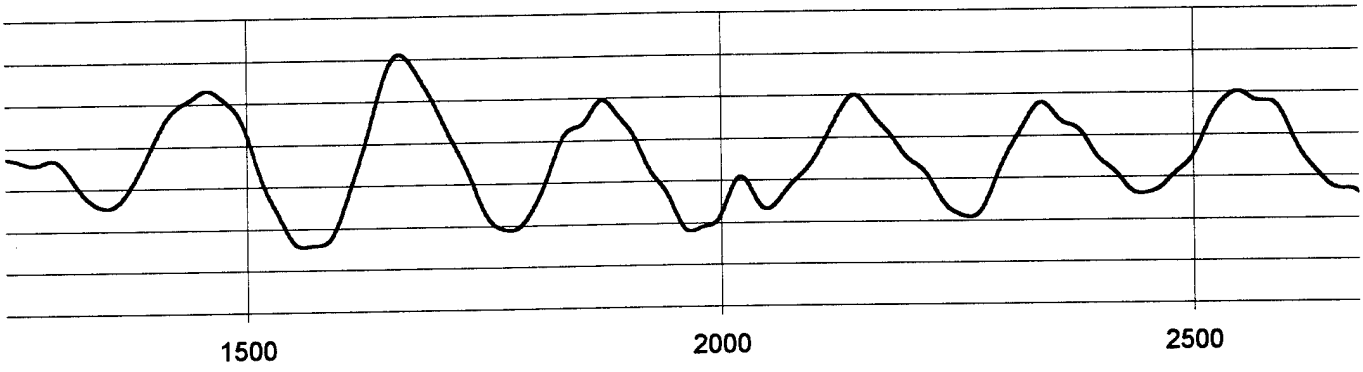



TEST A586 - PT SURGE

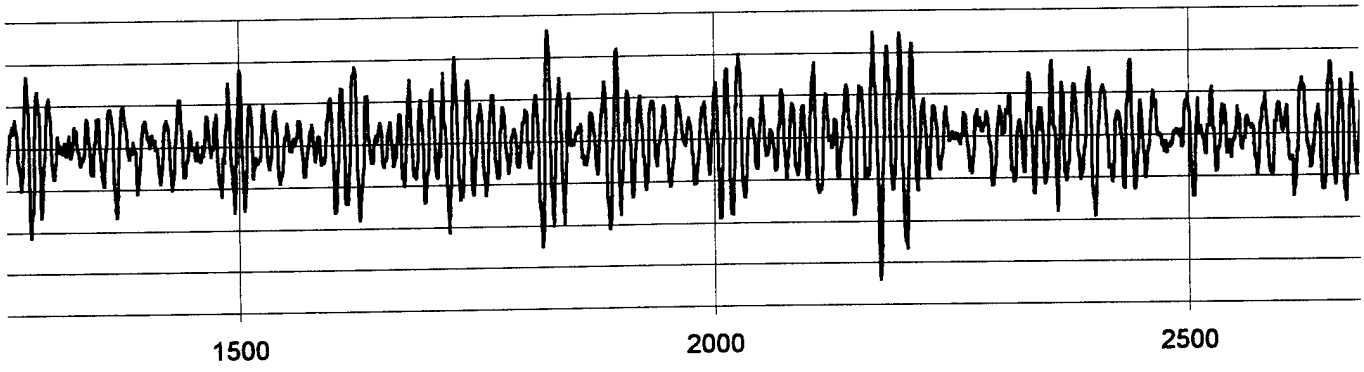
## Unfiltered Time History



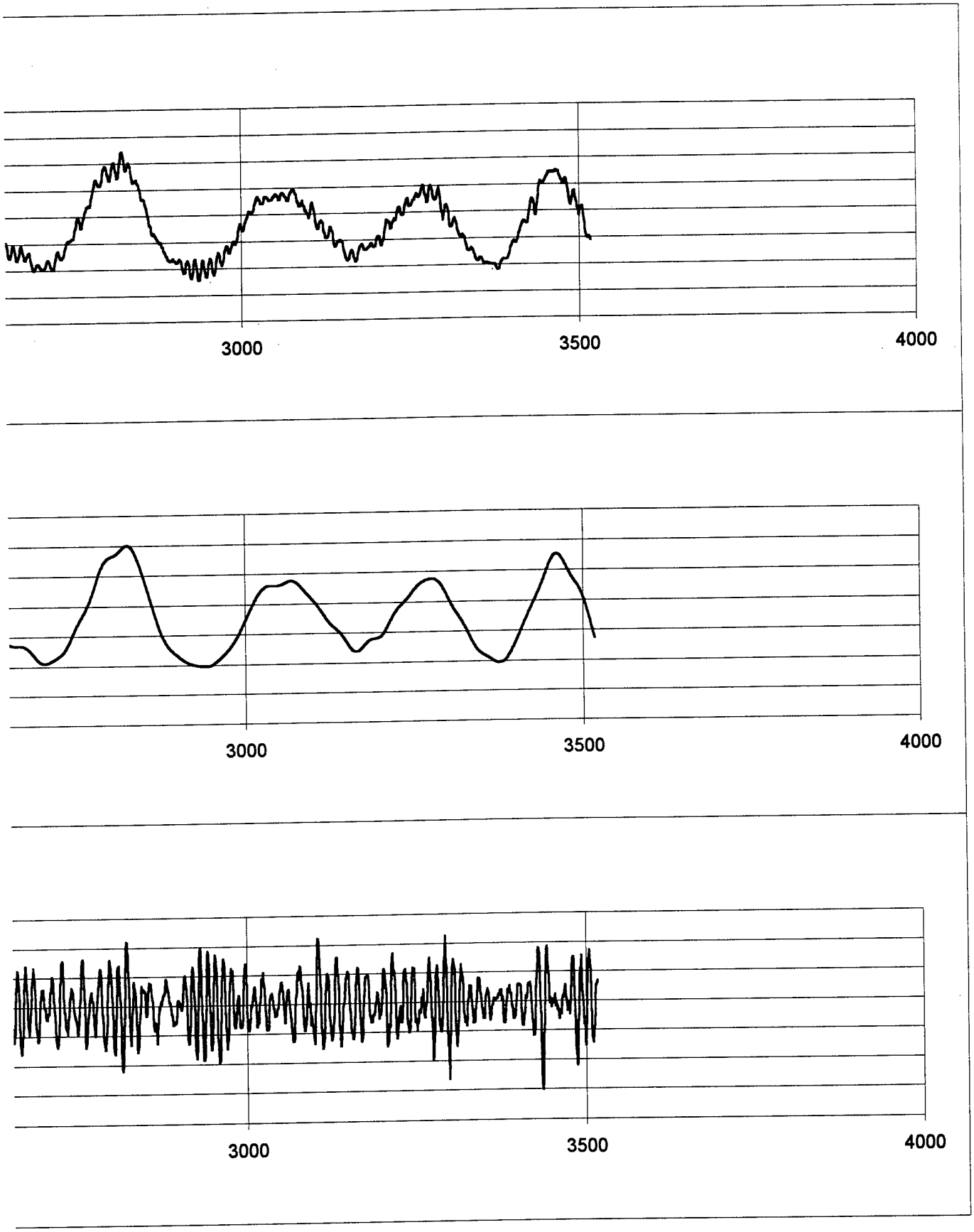

## Filtered Low Frequency Time History



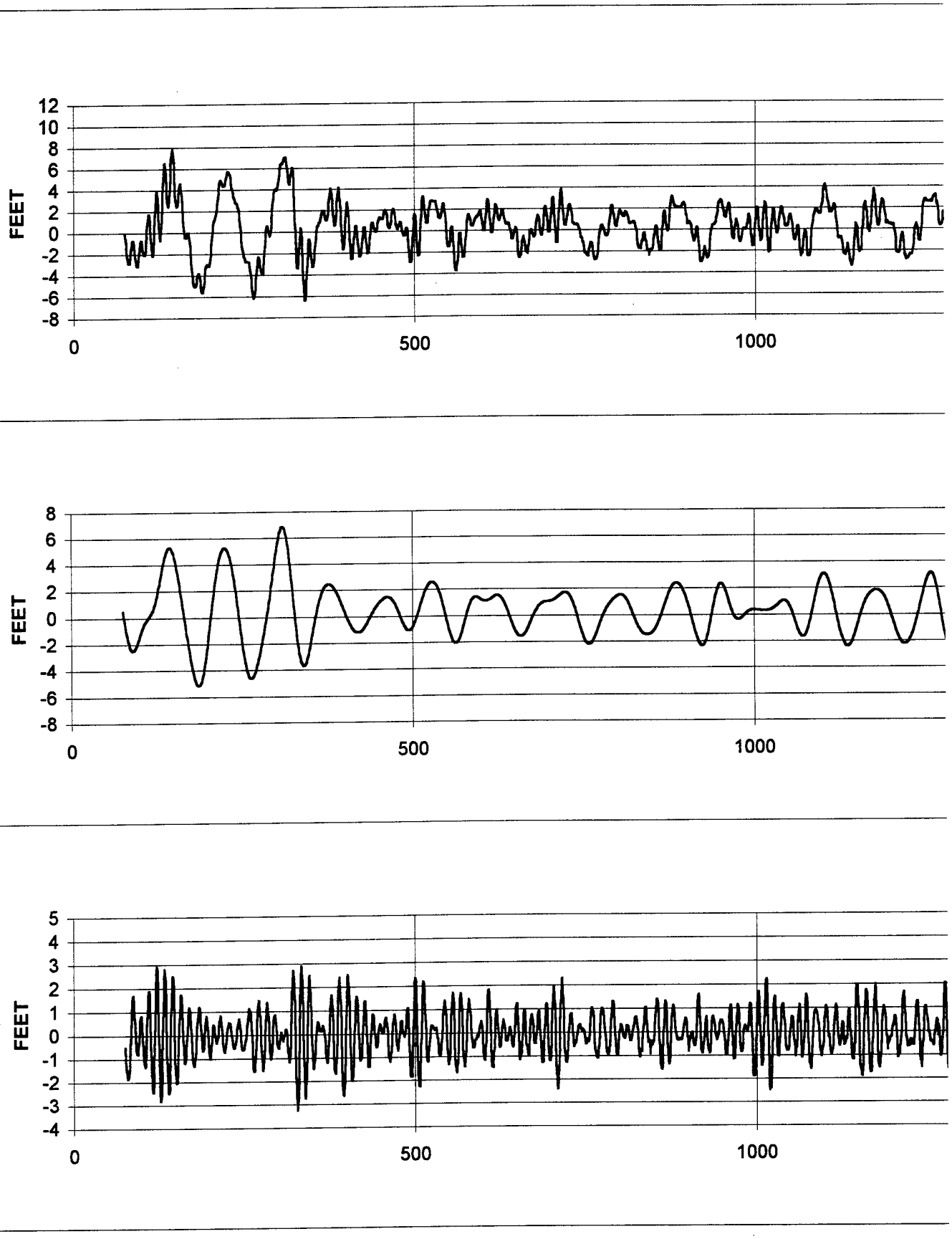

## Filtered High Frequency Time History



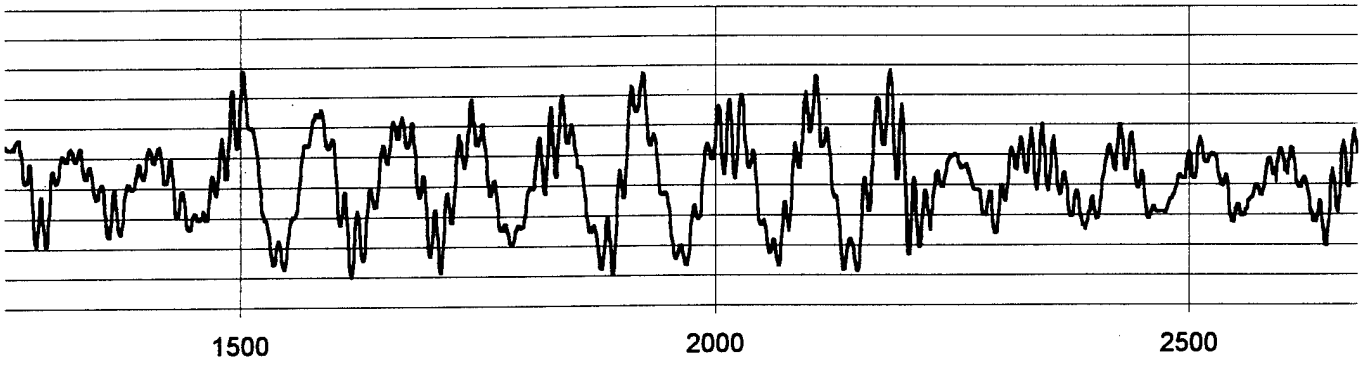
TEST A586 - PT SURGE



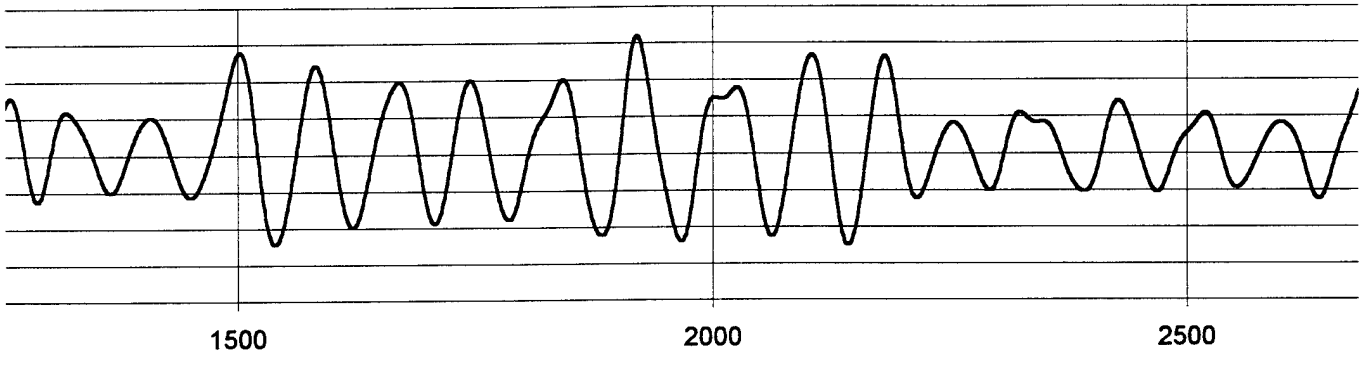
TEST A586 - PT HEAVE



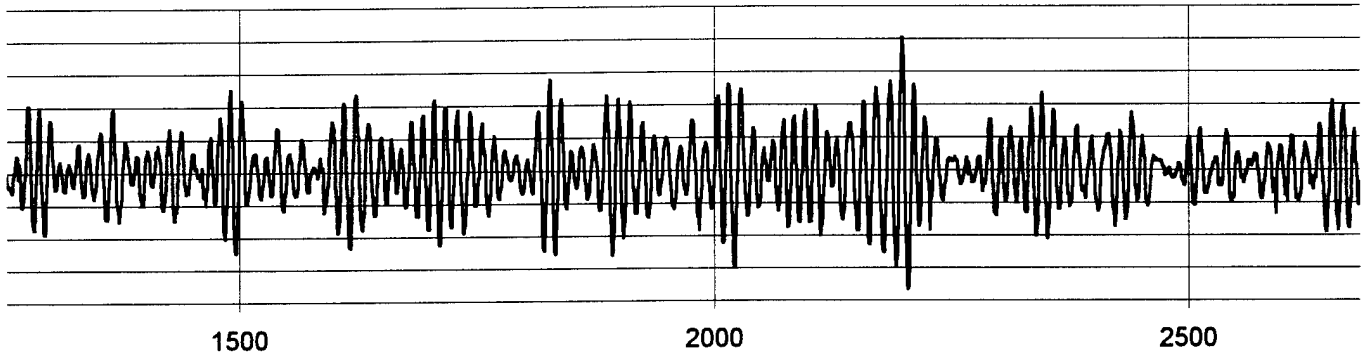
## Unfiltered Time History



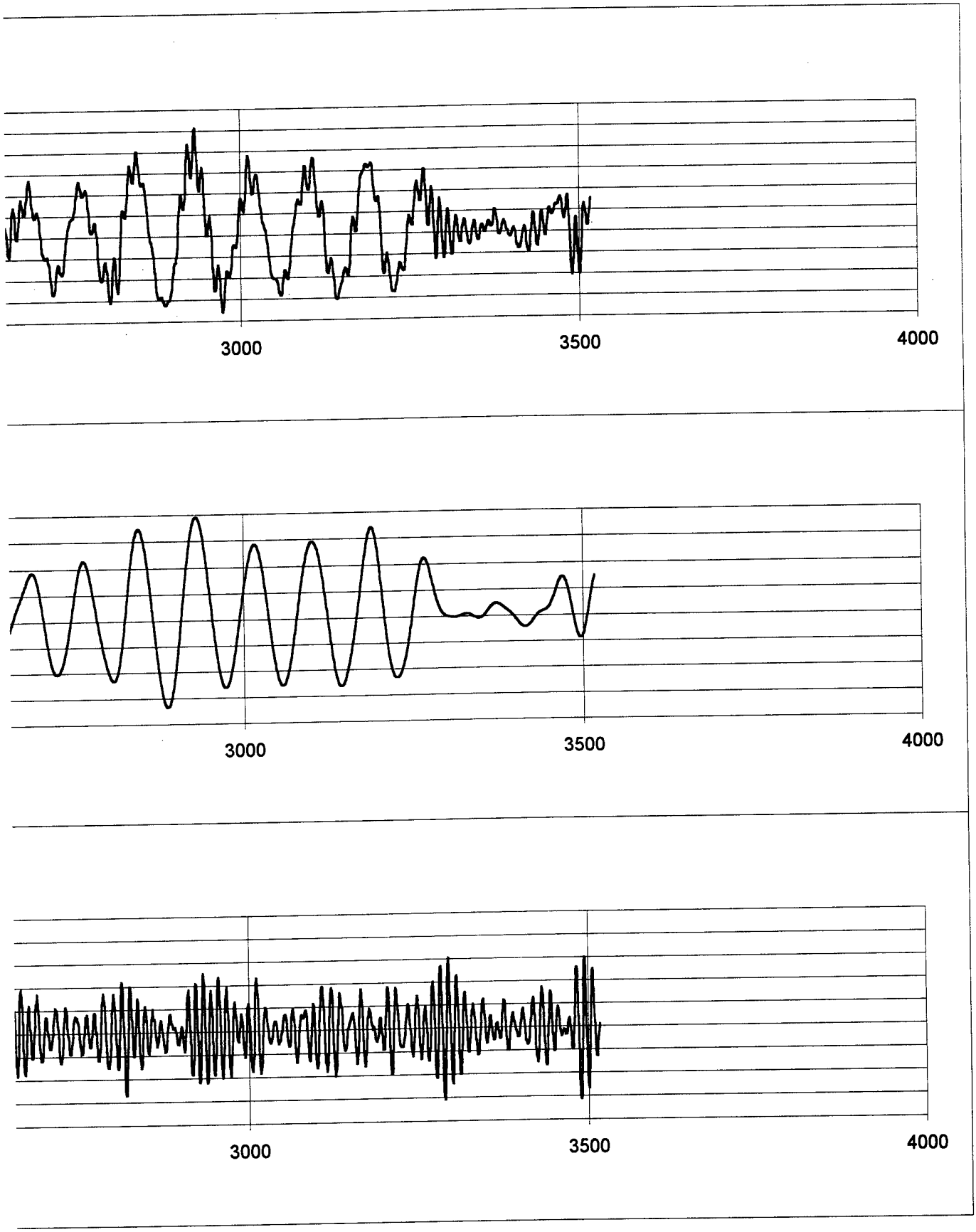

## Filtered Low Frequency Time History

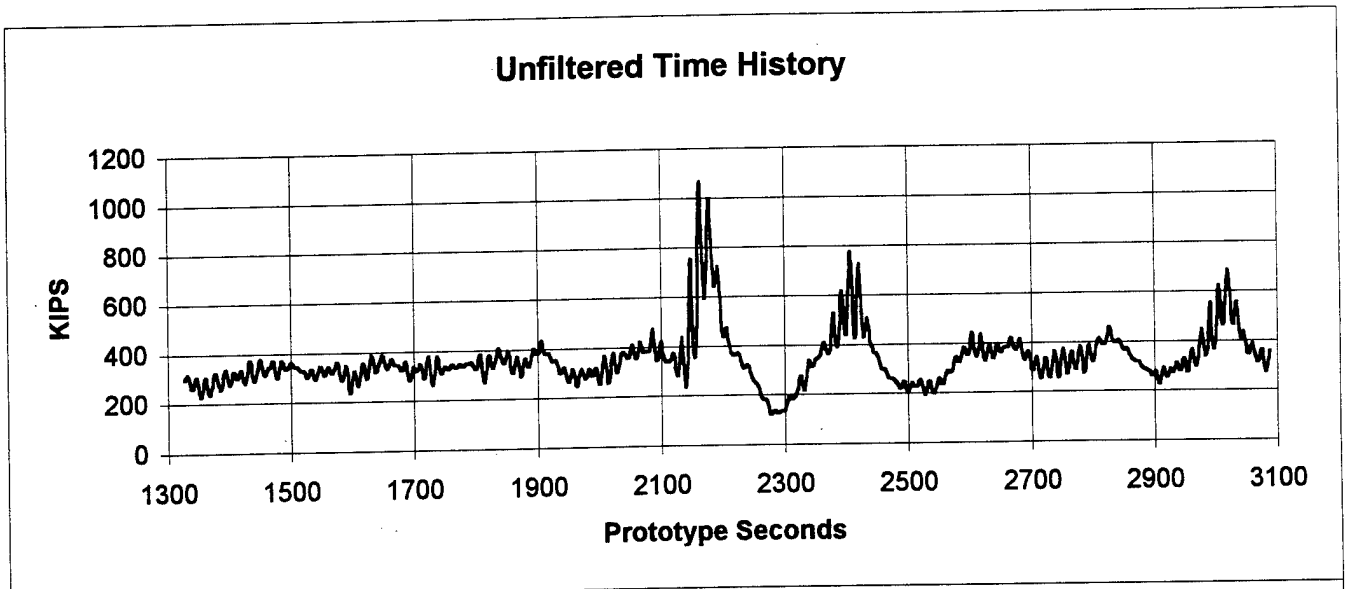


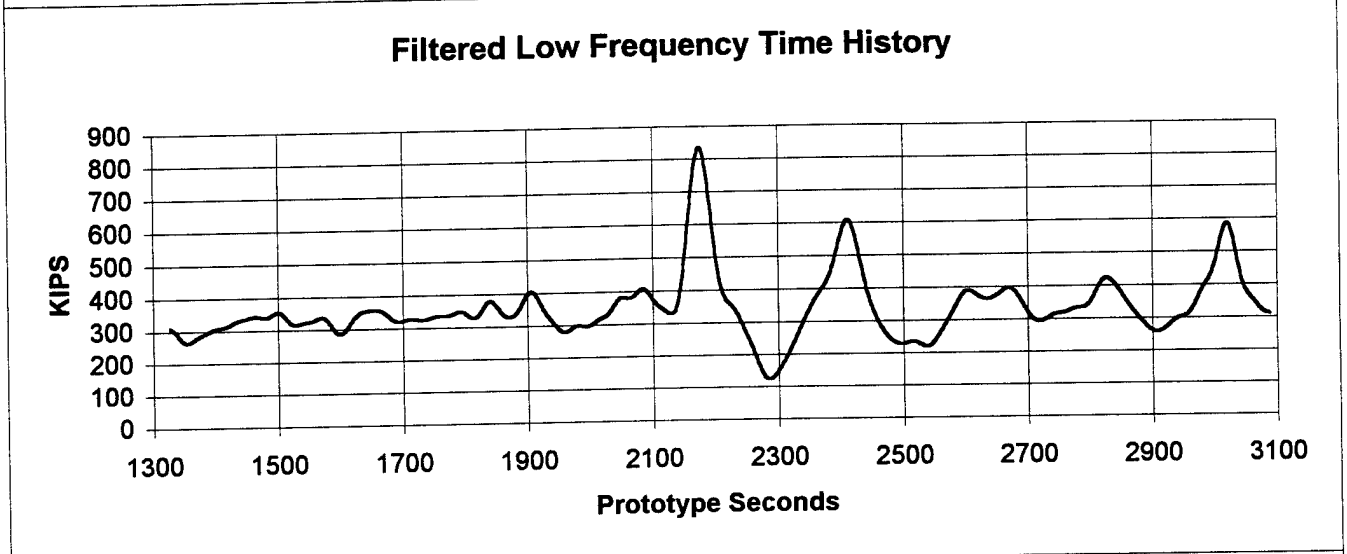

## Filtered High Frequency Time History

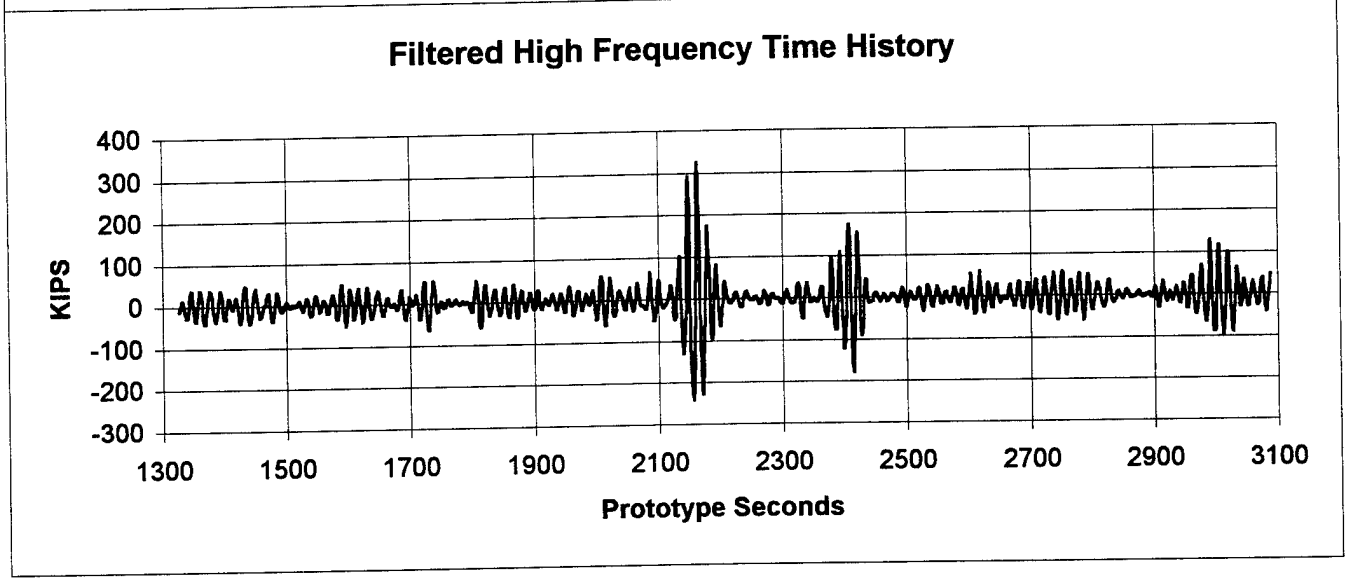


TEST A586 - PT HEAVE



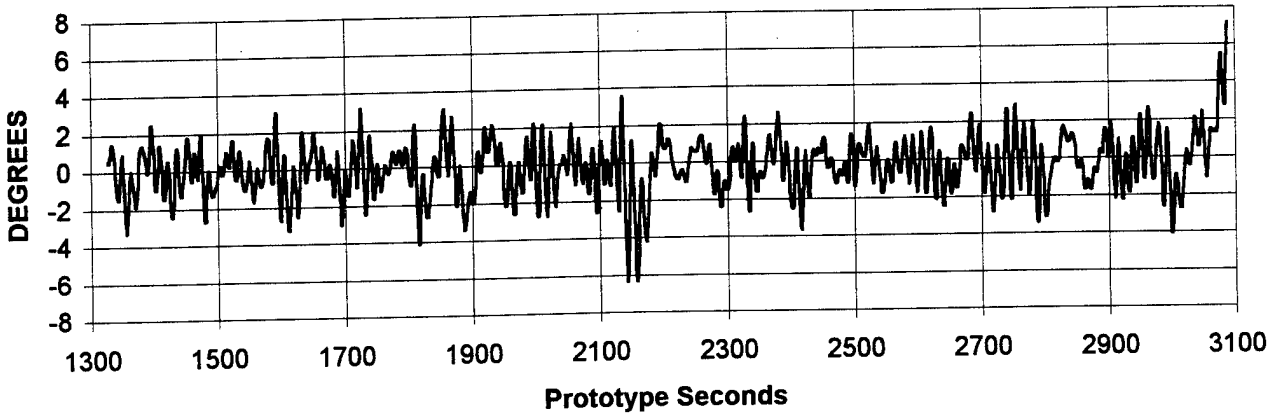

Unfiltered Time History
KIPS
1200
1000
800
600
400
200
0
1300
1500
1700
1900
2100
2300
2500
2700
2900
3100
Prototype Seconds


Filtered Low Frequency Time History
KIPS
900
800
700
600
500
400
300
200
100
0
1300
1500
1700
1900
2100
2300
2500
2700
2900
3100
Prototype Seconds

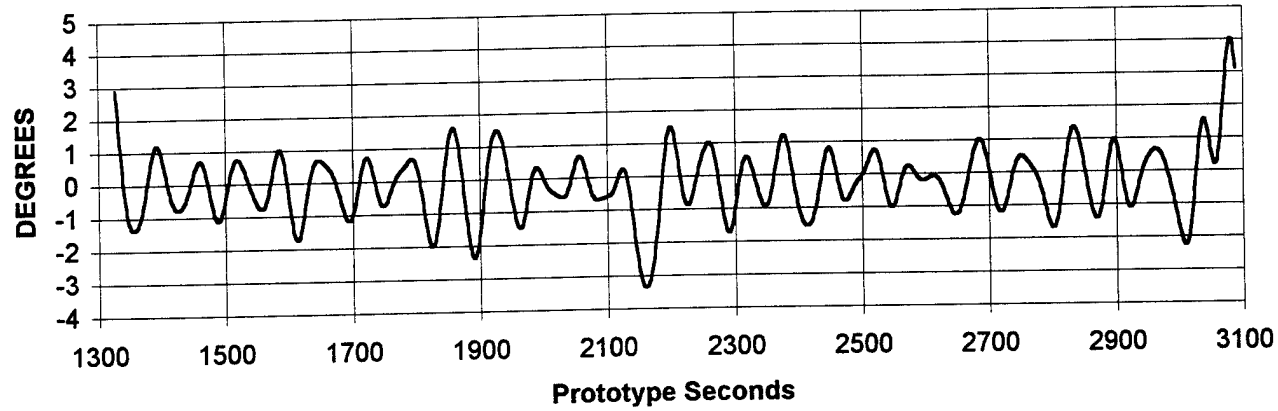

Filtered High Frequency Time History
KIPS
400
300
200
100
0
-100
-200
-300
1300
1500
1700
1900
2100
2300
2500
2700
2900
3100
Prototype Seconds

TEST A587 - PITCH

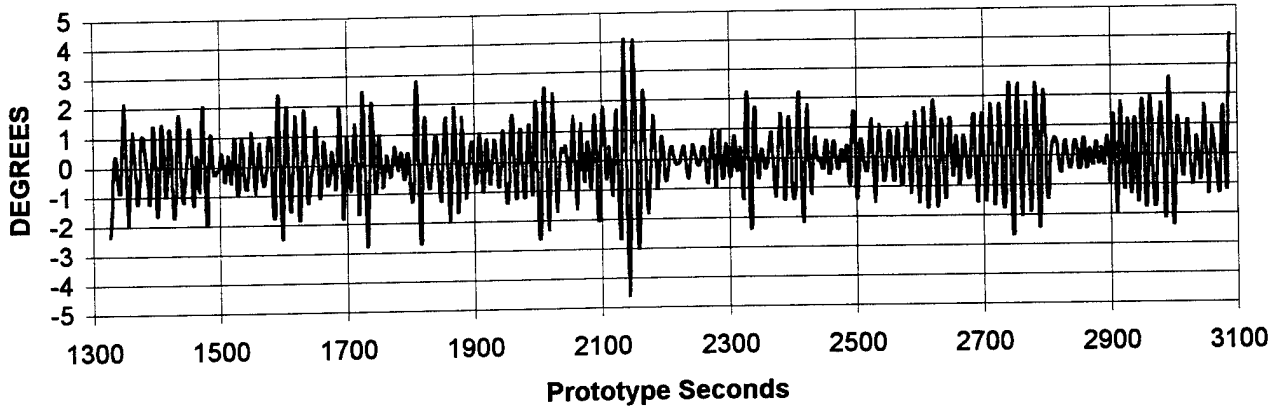
## Unfiltered Time History




## Filtered Low Frequency Time History

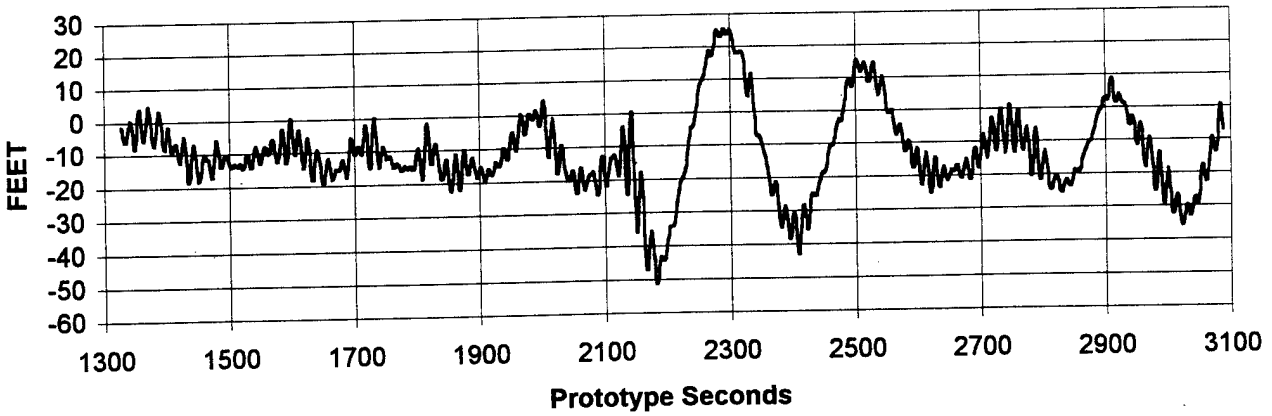



## Filtered High Frequency Time History

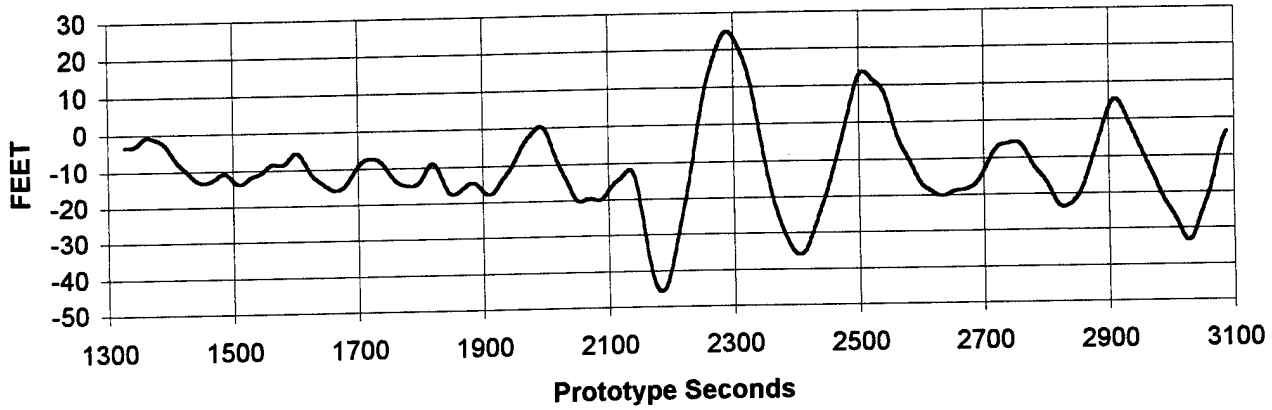


TEST A587 - PT SURGE

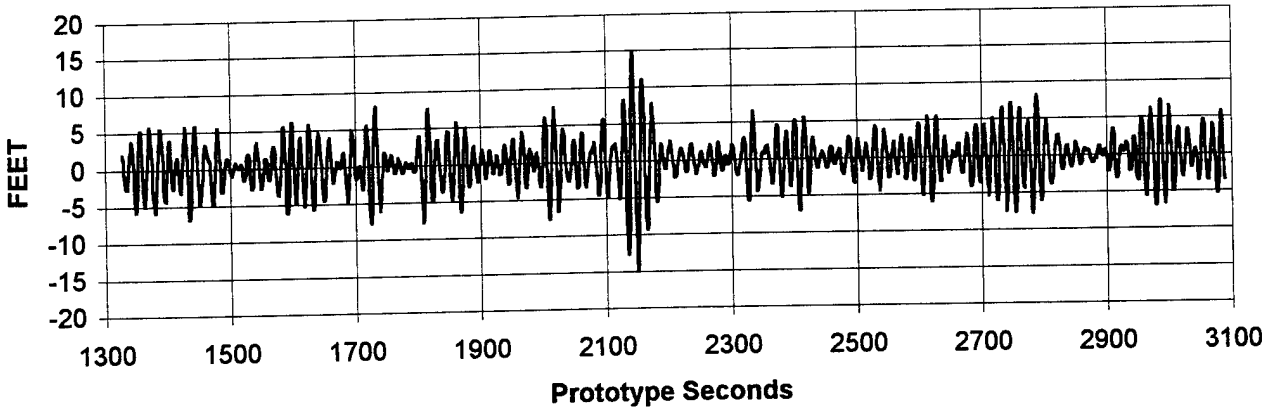
## Unfiltered Time History



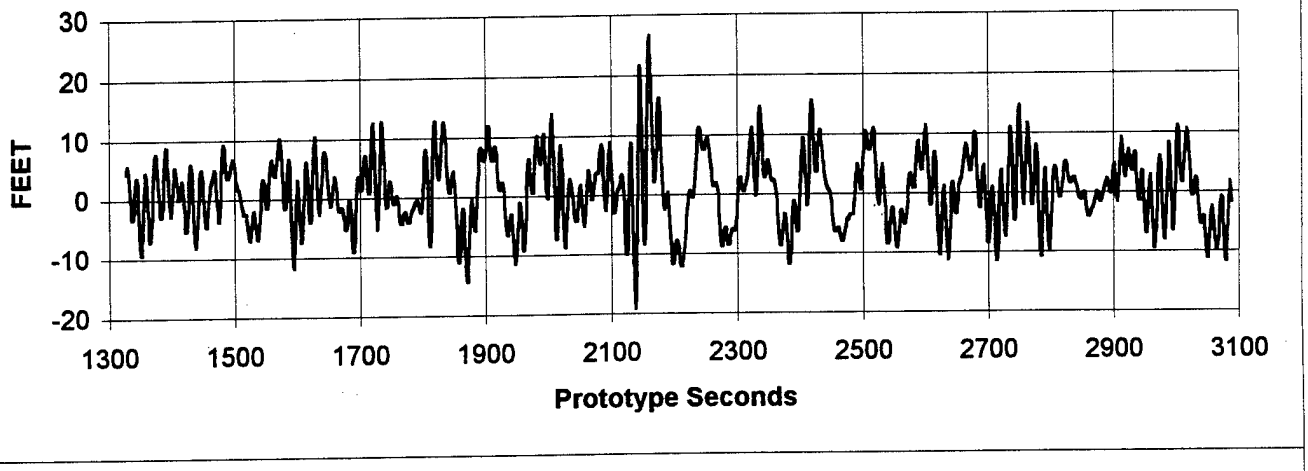

## Filtered Low Frequency Time History

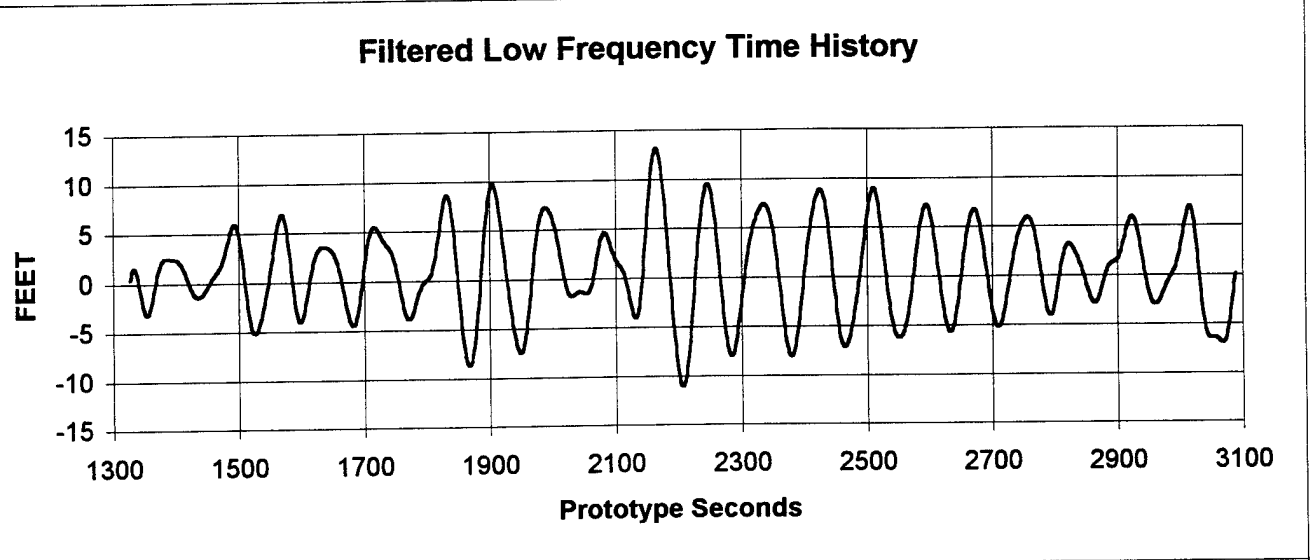


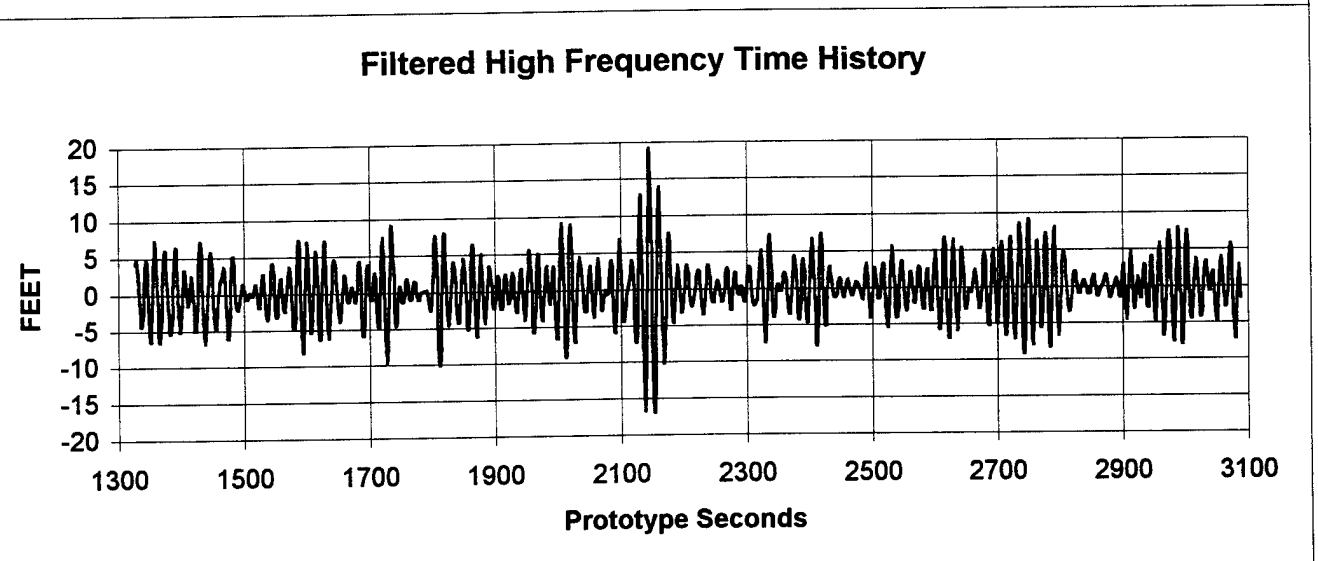

## Filtered High Frequency Time History

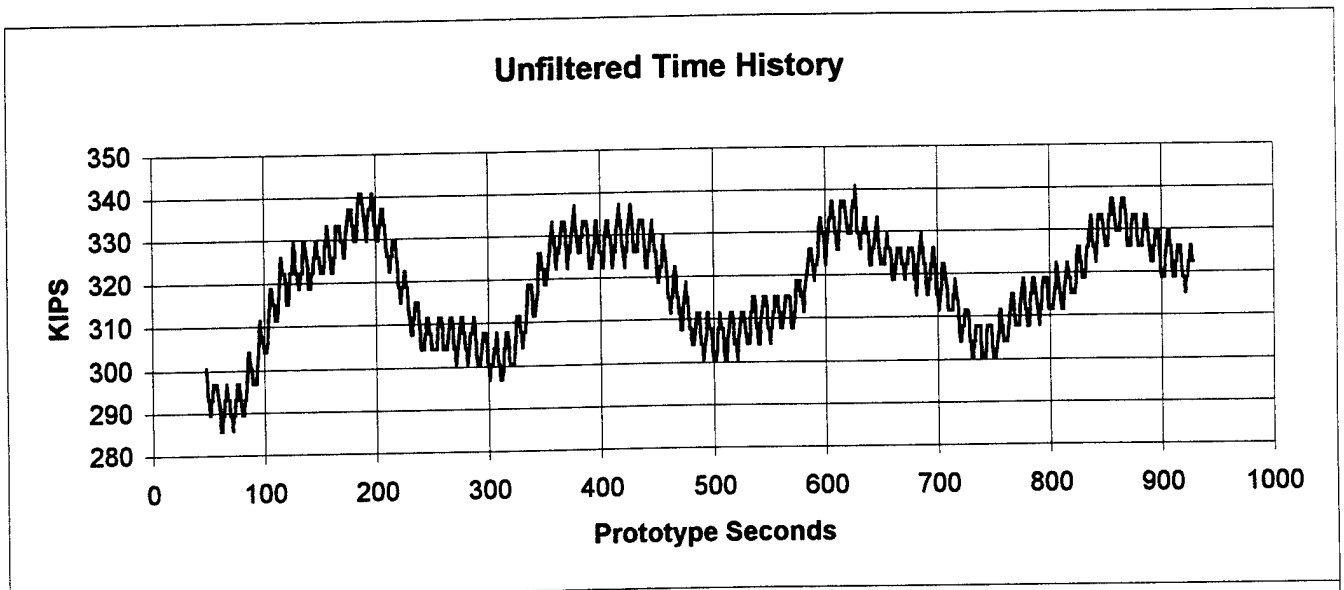


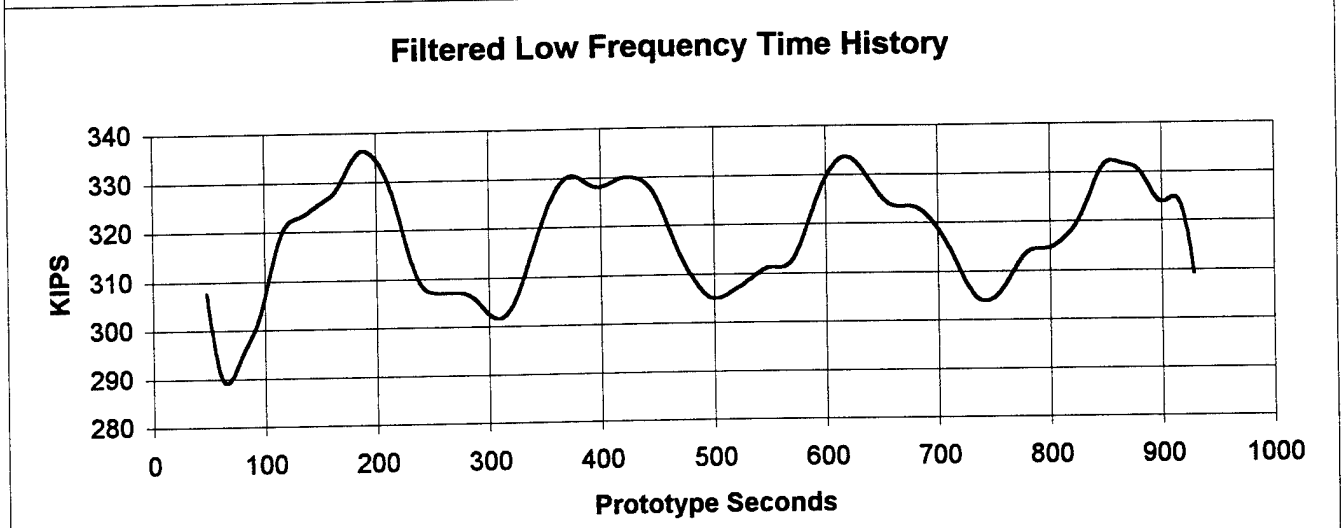
TEST A587 - PT HEAVE

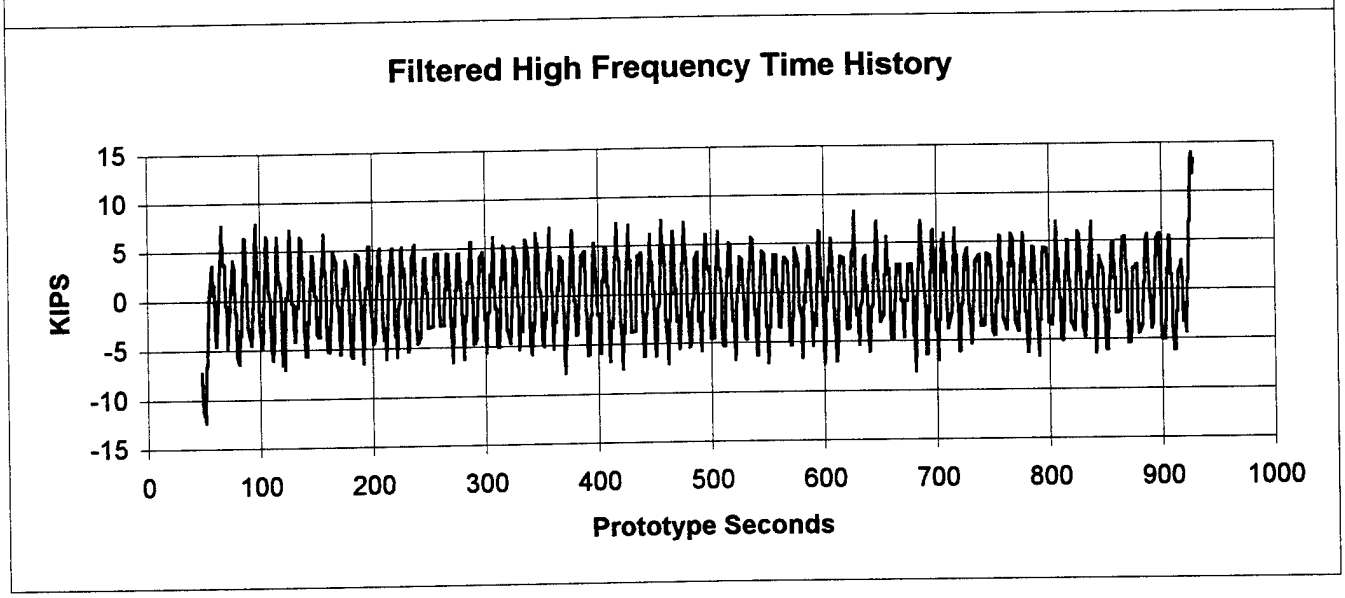


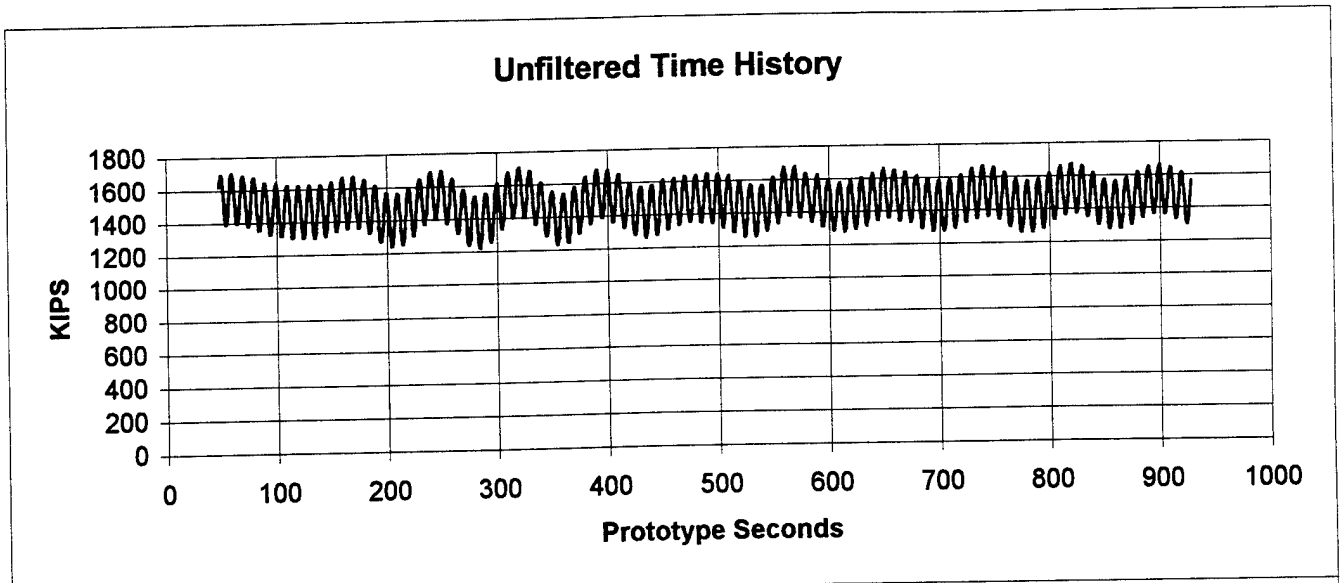



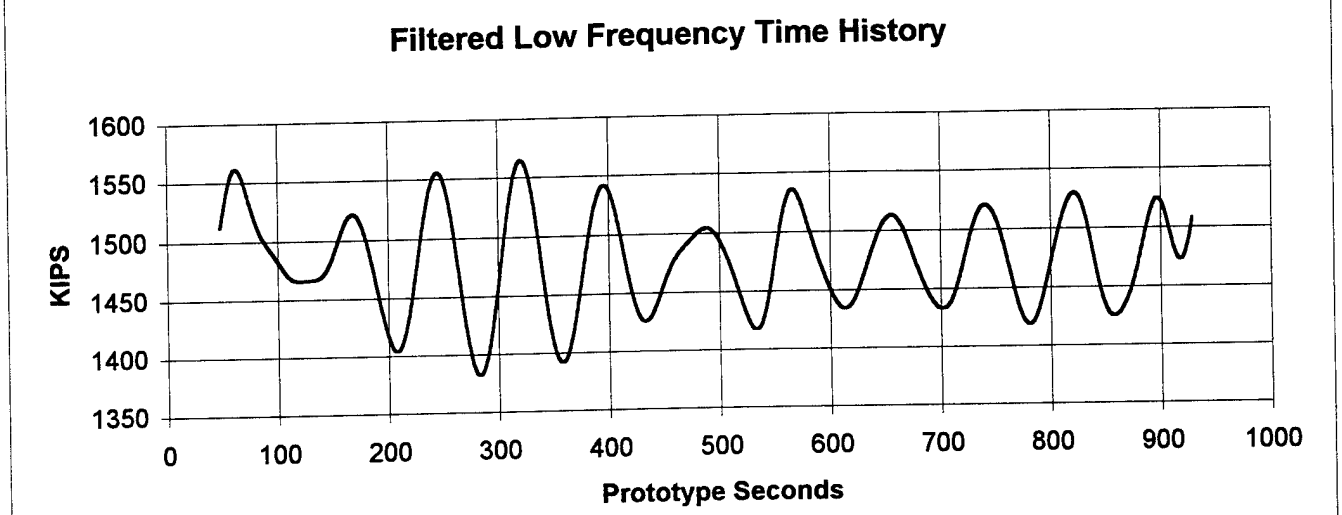

Unfiltered Time History
KIPS
350
340
330
320
310
300
290
280
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

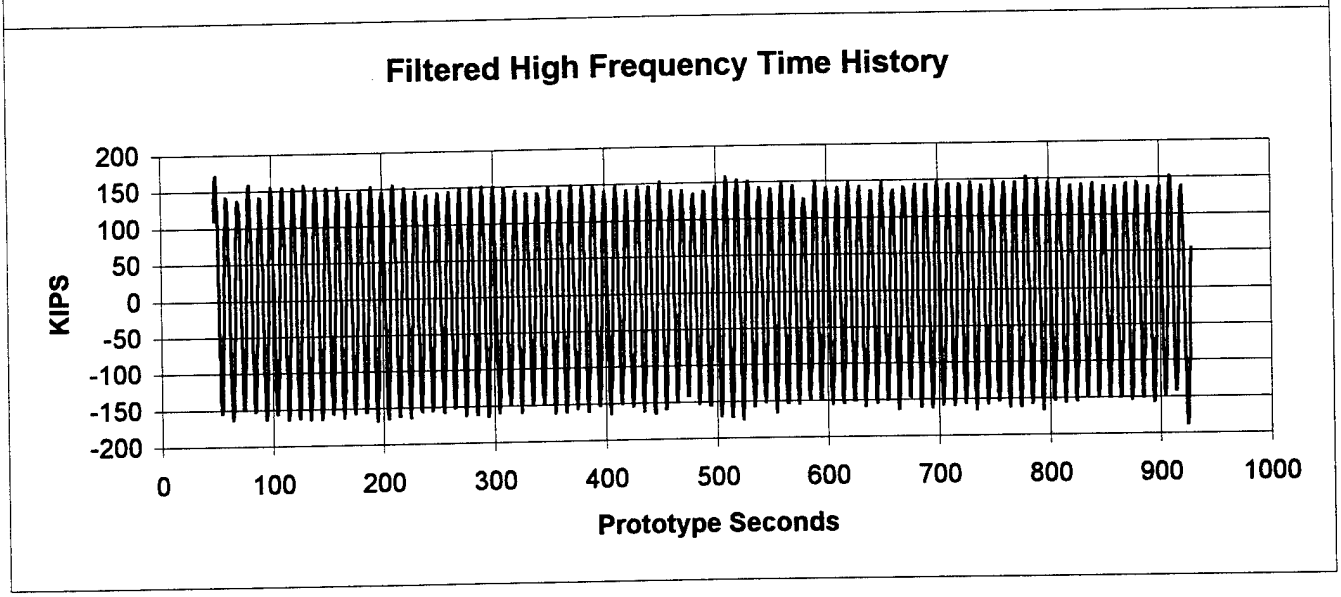

Filtered Low Frequency Time History
KIPS
340
330
320
310
300
290
280
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds


Filtered High Frequency Time History
KIPS
15
10
5
0
-5
-10
-15
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

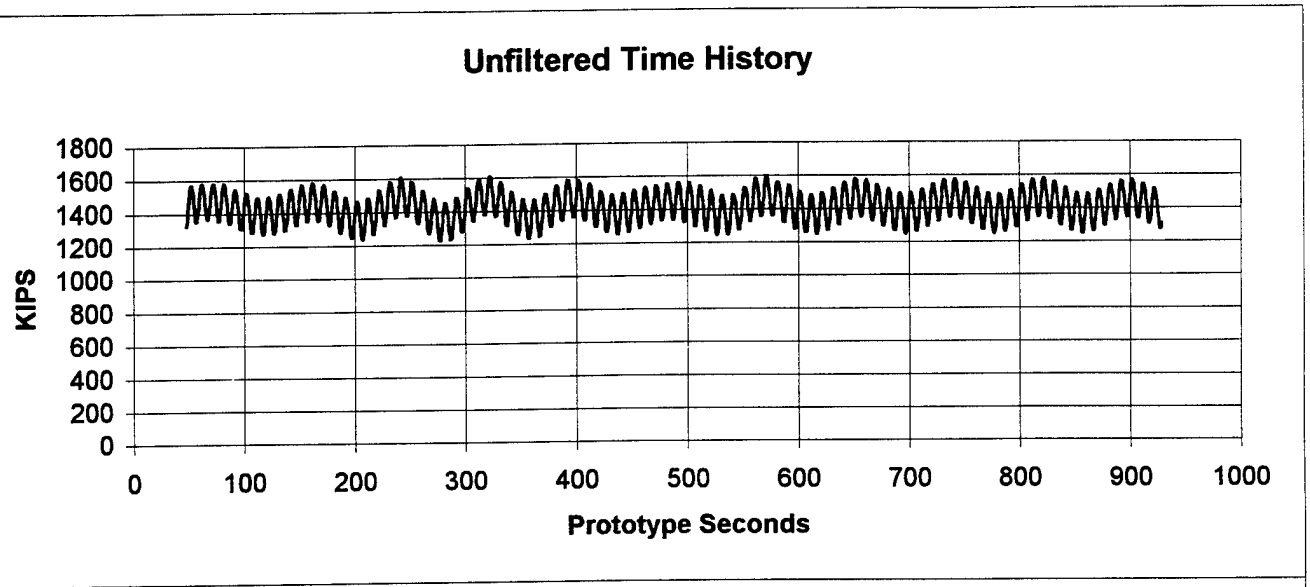
TEST A593 - BUOY 1 TENSION

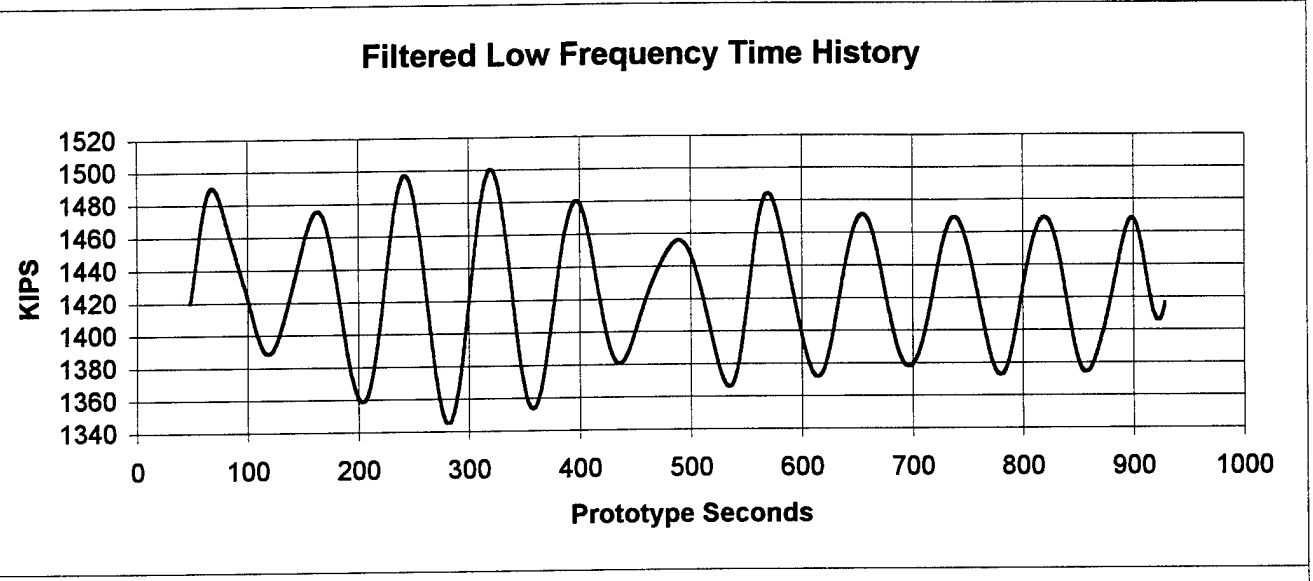


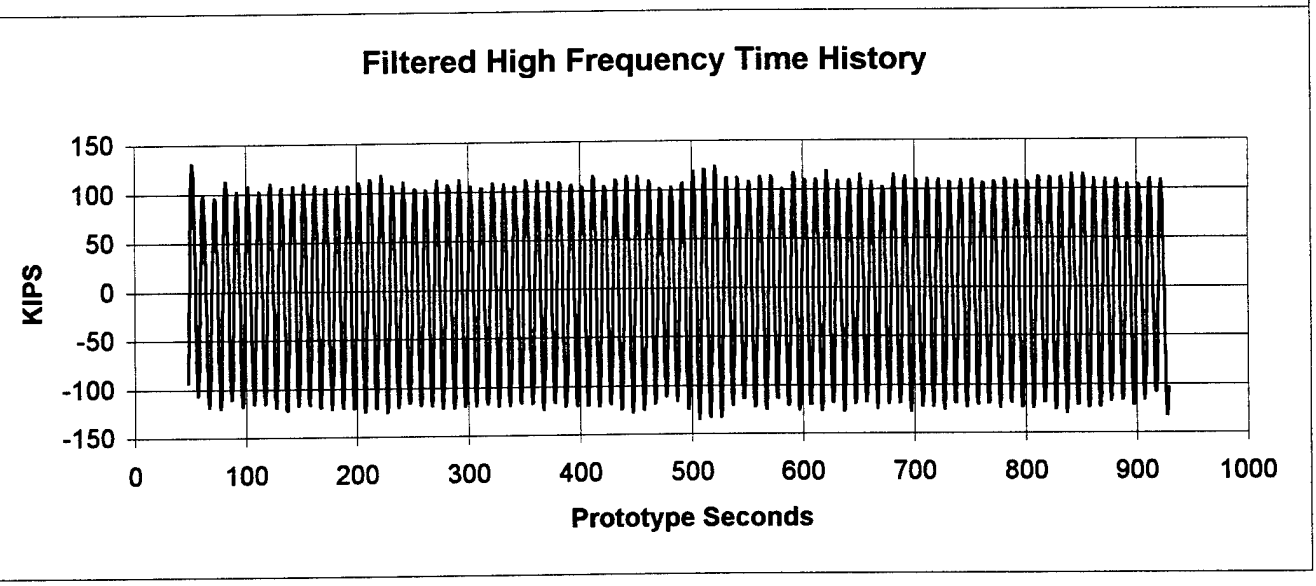



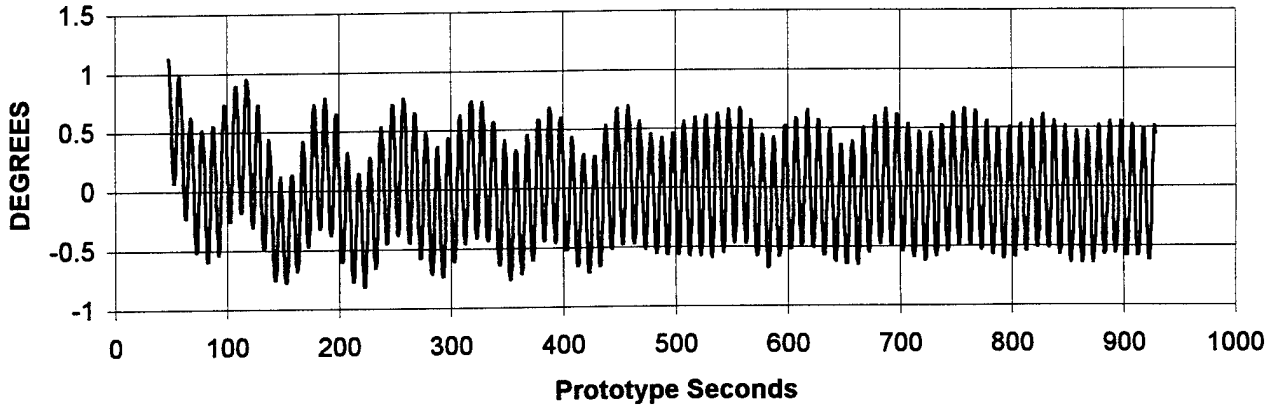
TEST A593 - BUOY 2 TENSION

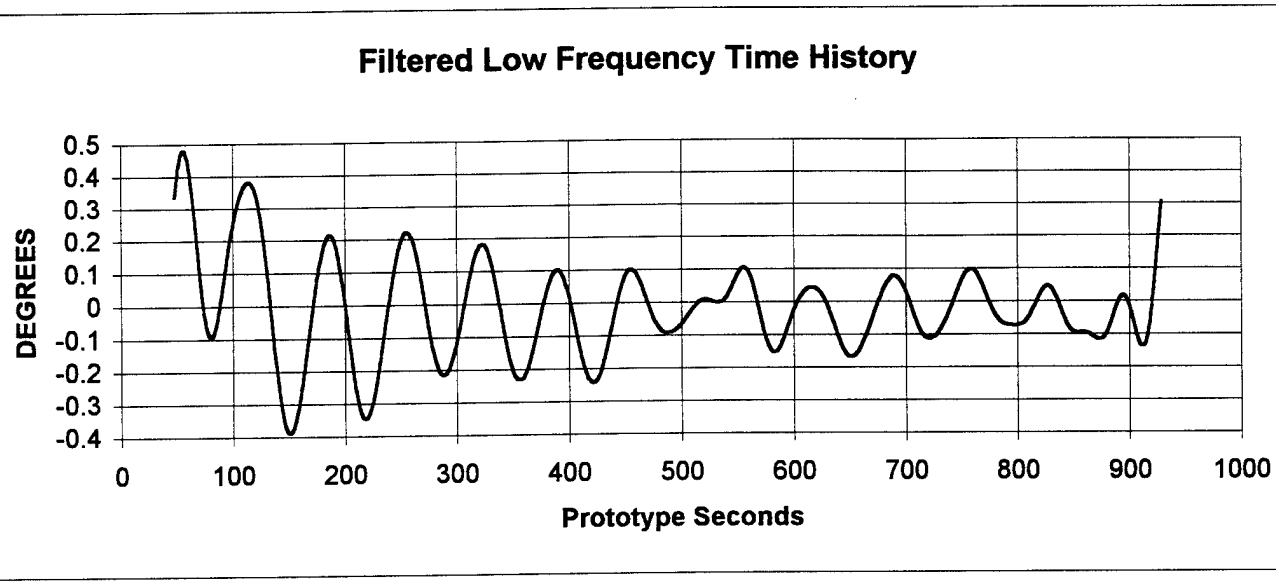


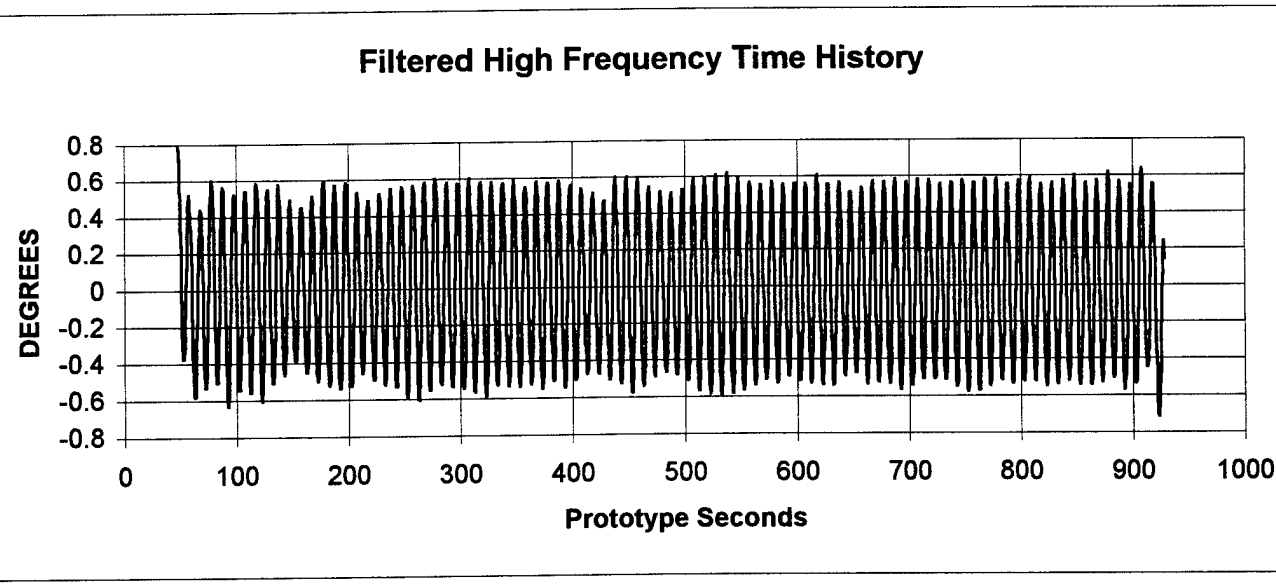



TEST A593 - PITCH

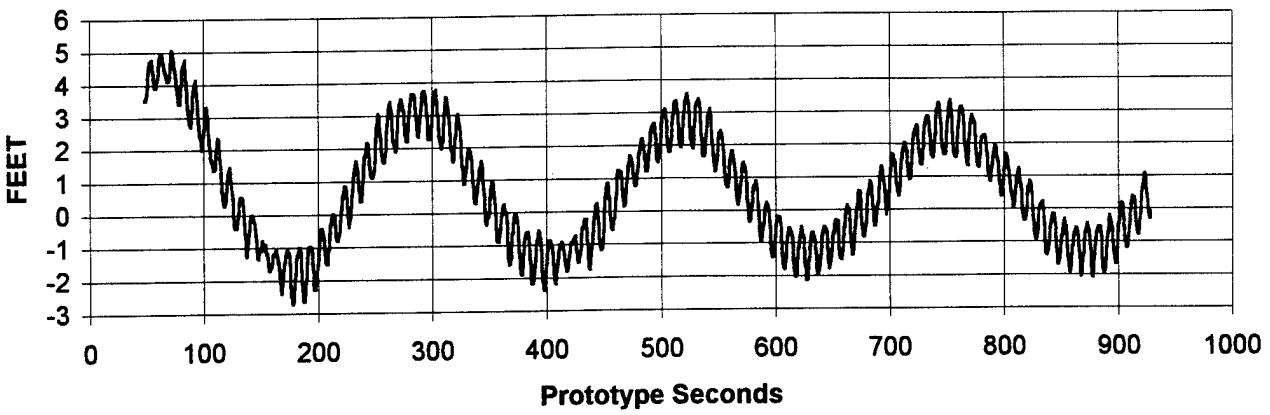


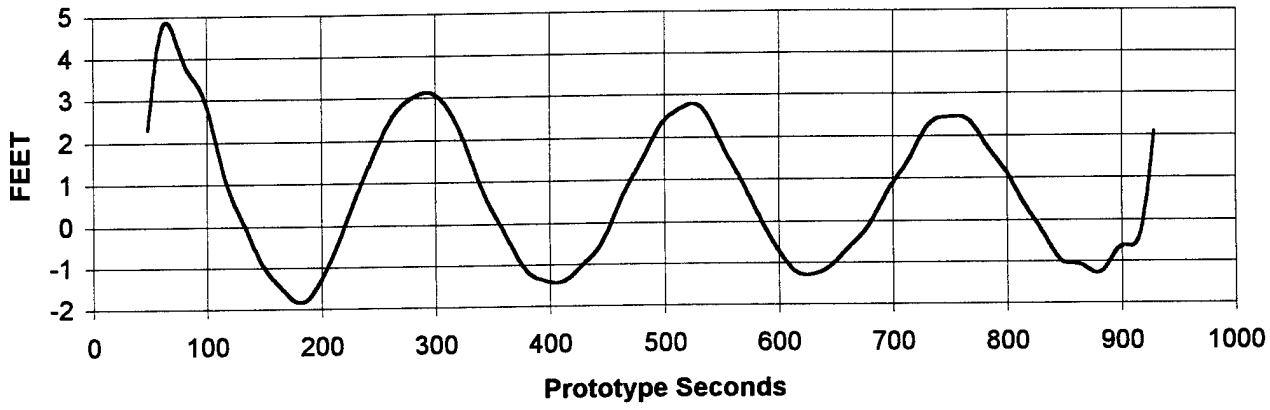



TEST A593 - PT SURGE

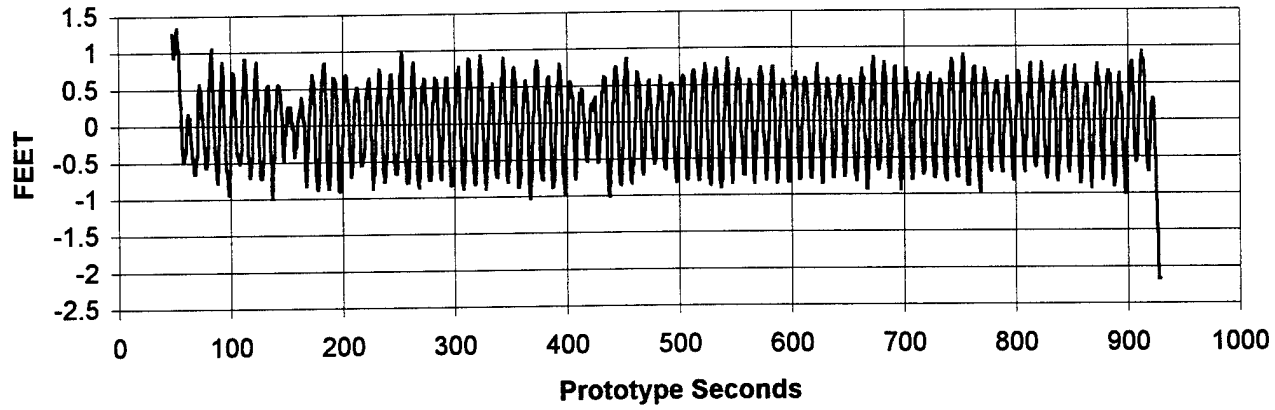
## Unfiltered Time History



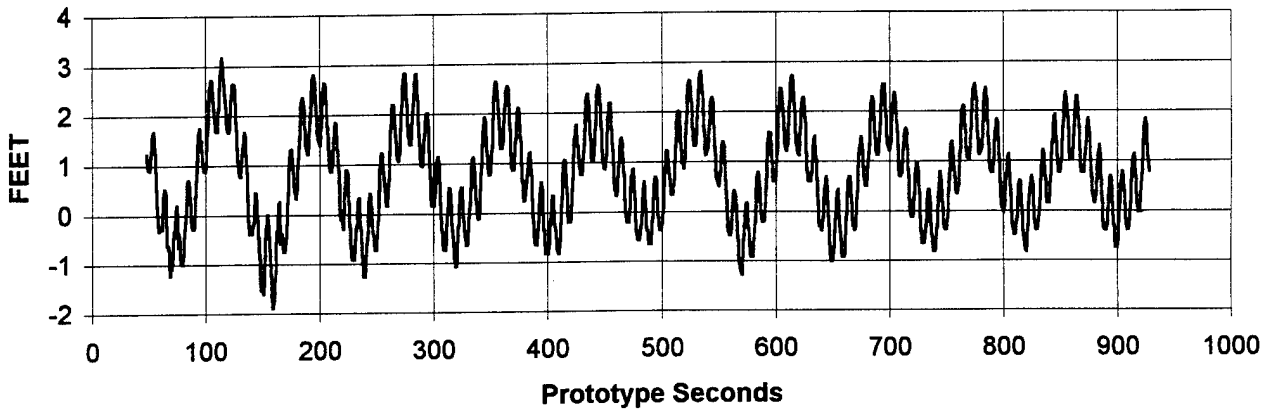

## Filtered Low Frequency Time History



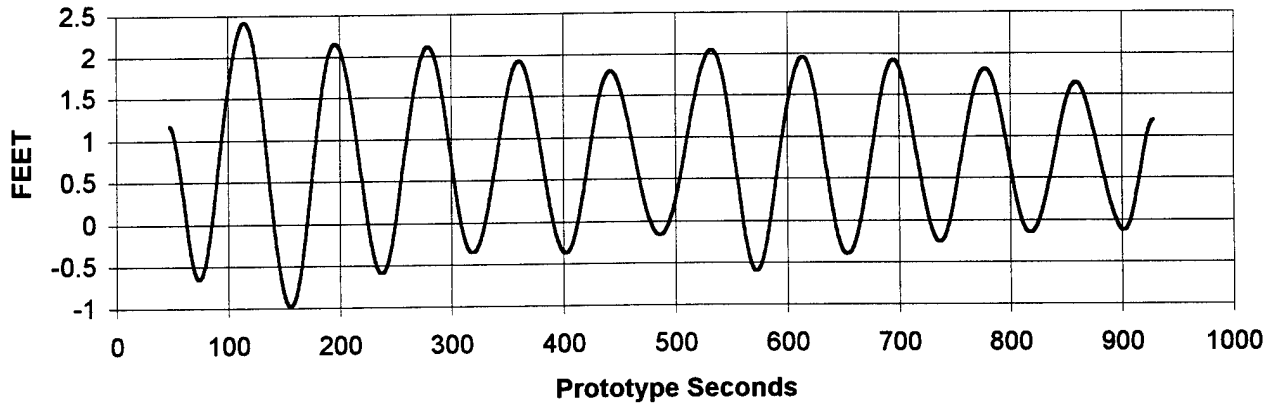

## Filtered High Frequency Time History



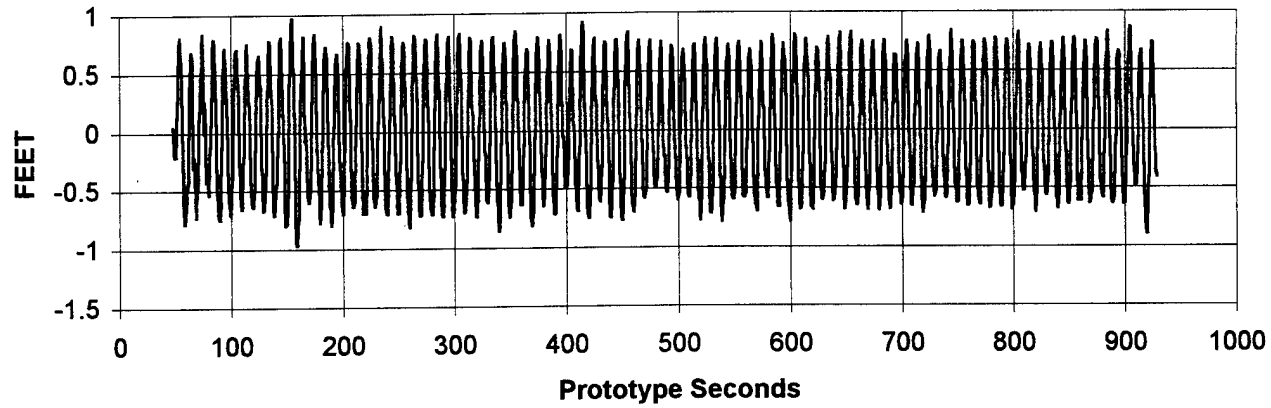
## Unfiltered Time History

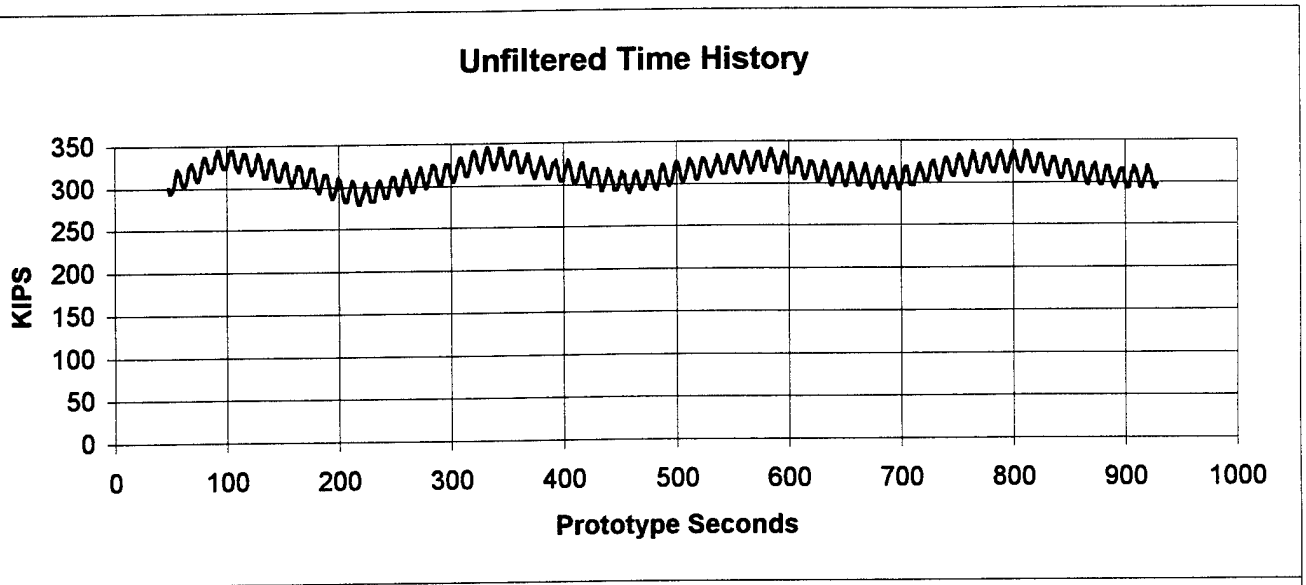


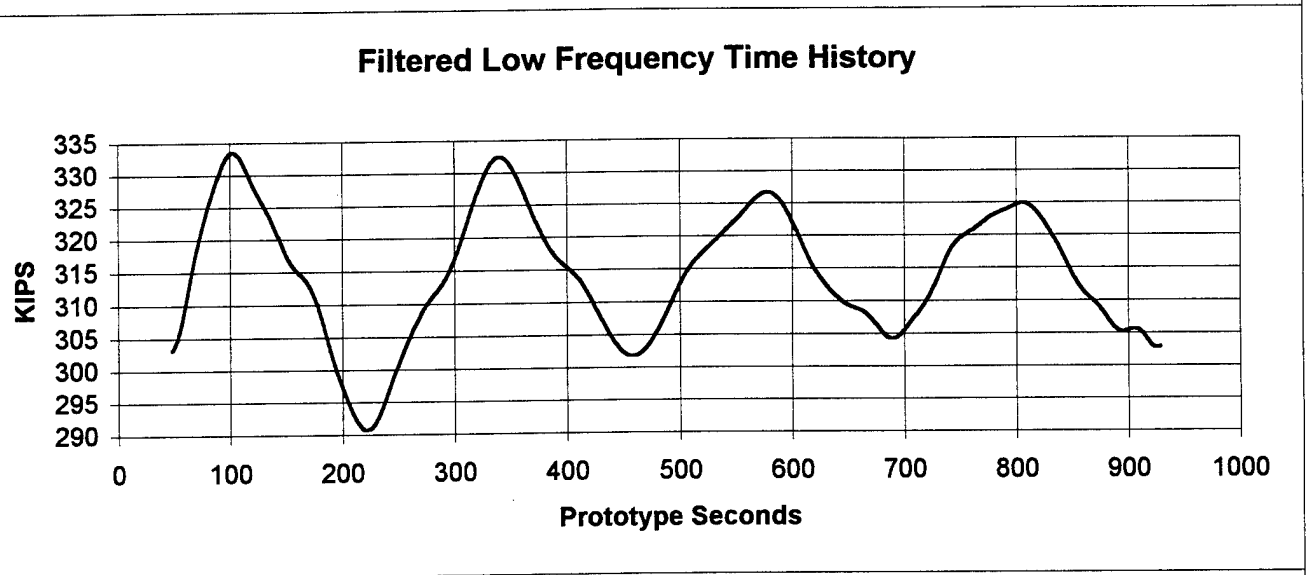

## Filtered Low Frequency Time History

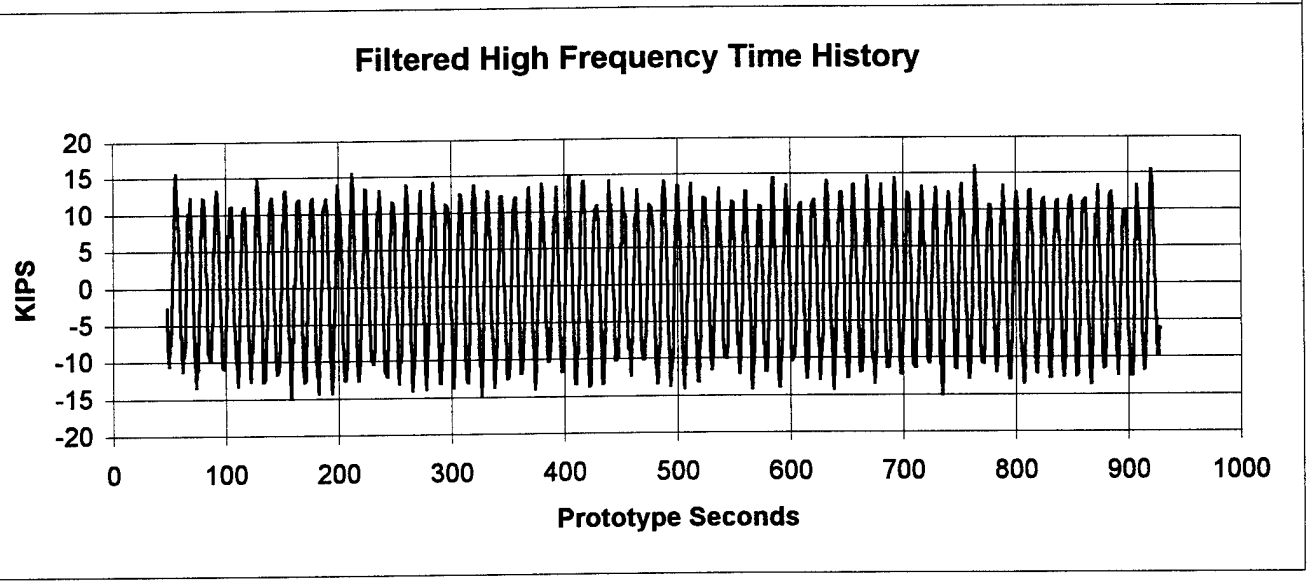



## Filtered High Frequency Time History

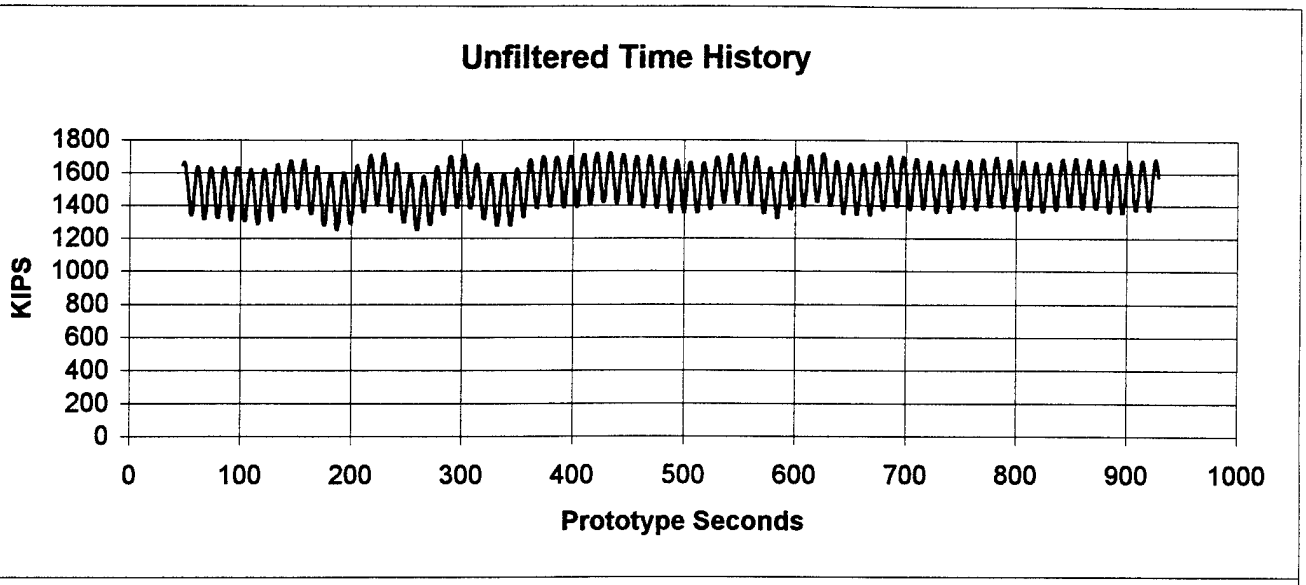


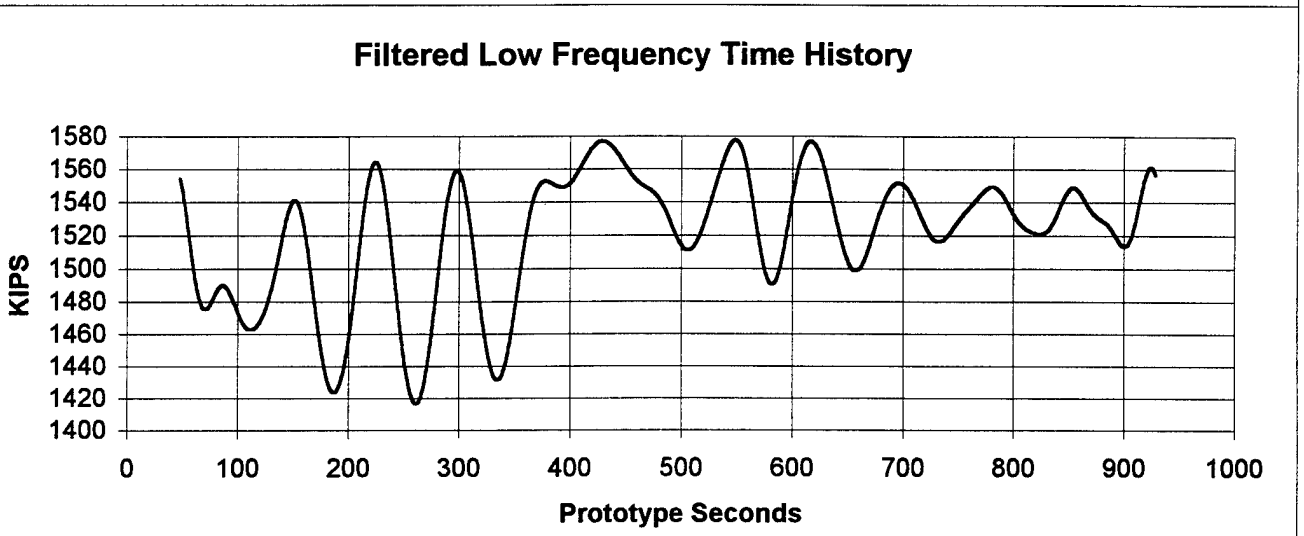

Unfiltered Time History
KIPS
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

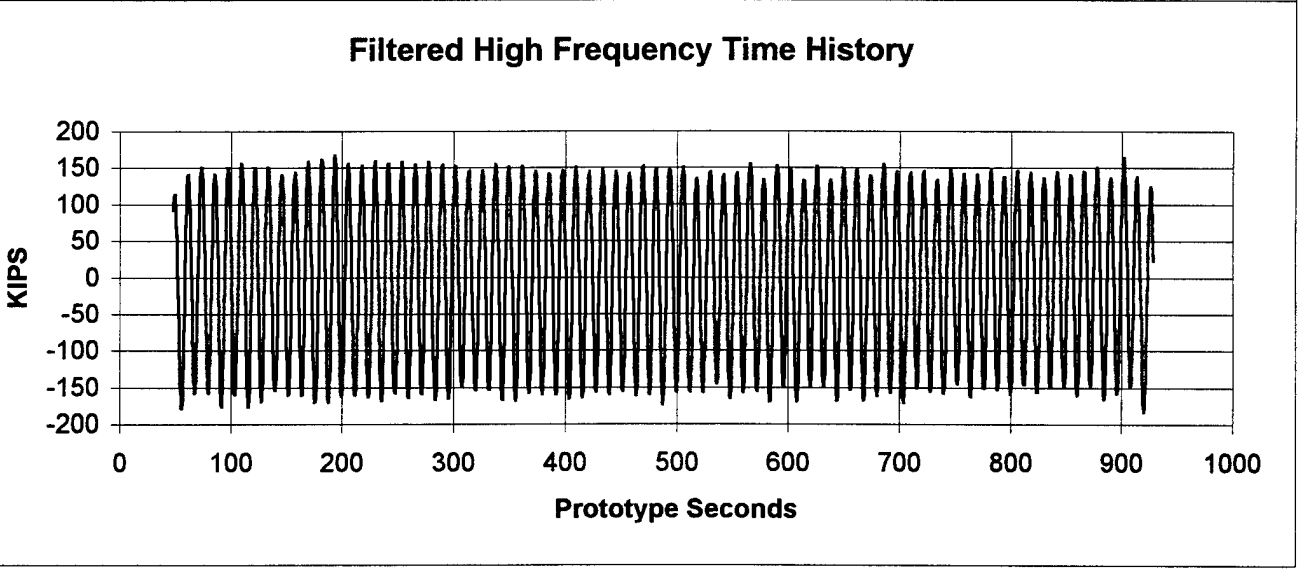

Filtered Low Frequency Time History
KIPS
335
330
325
320
315
310
305
300
295
290
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds


Filtered High Frequency Time History
KIPS
20
15
10
5
0
-5
-10
-15
-20
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

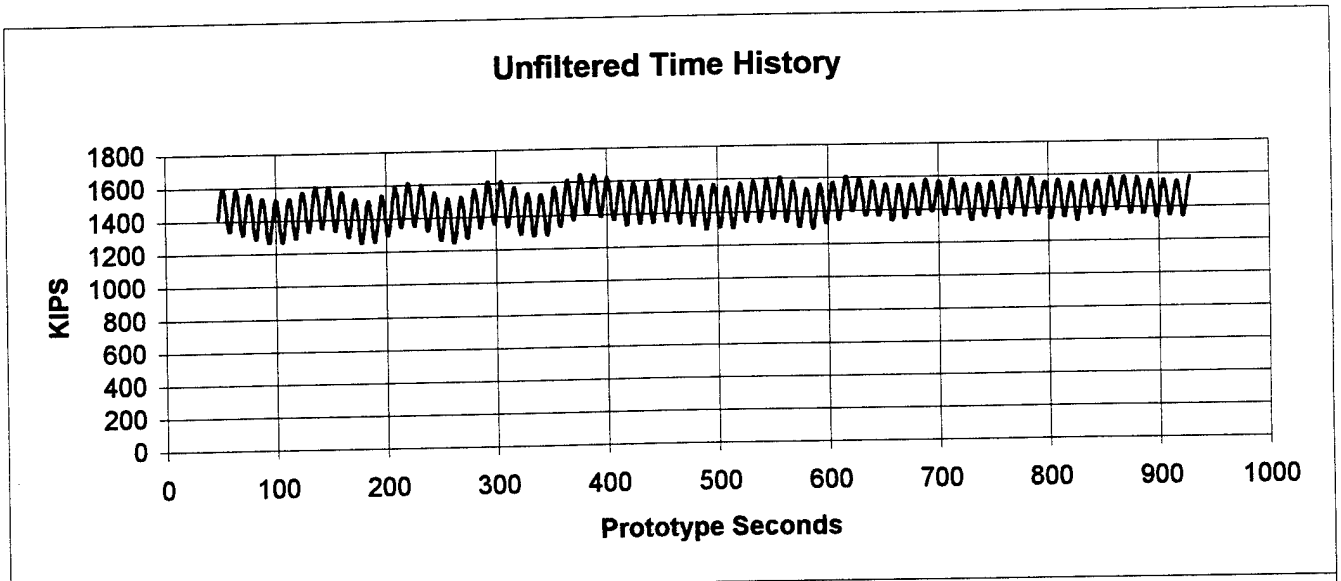
TEST A594 - BUOY 2 TENSION

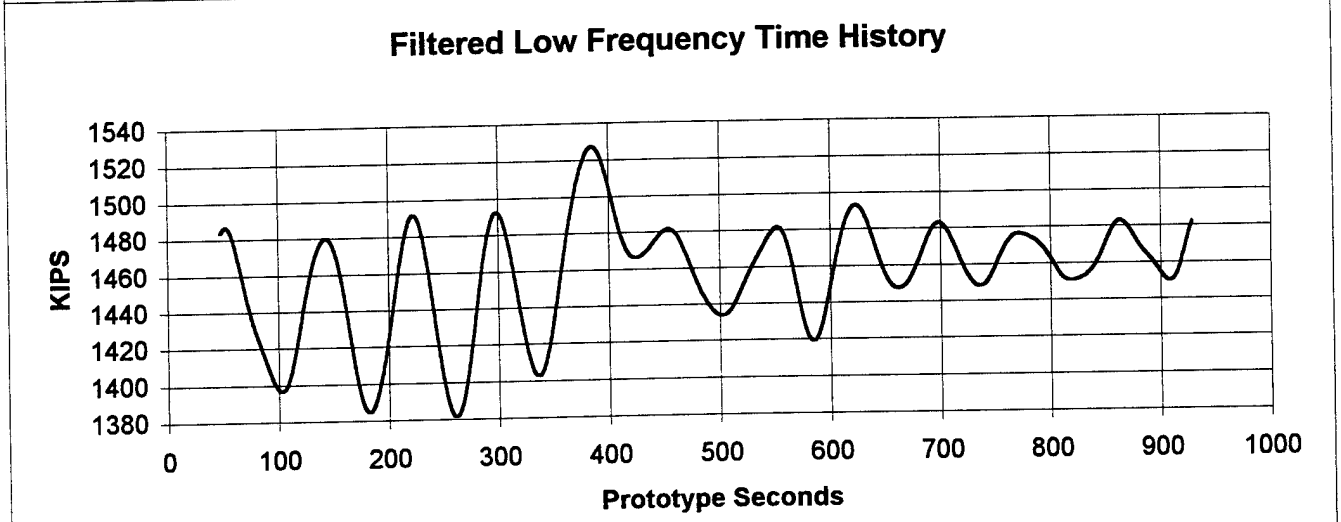


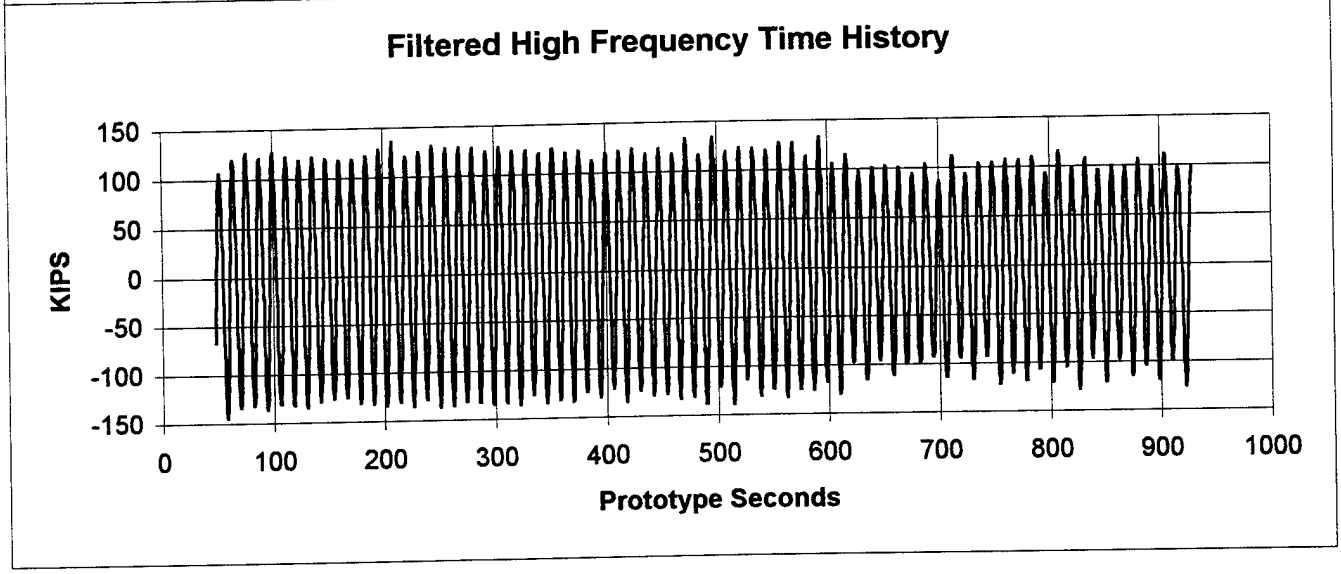



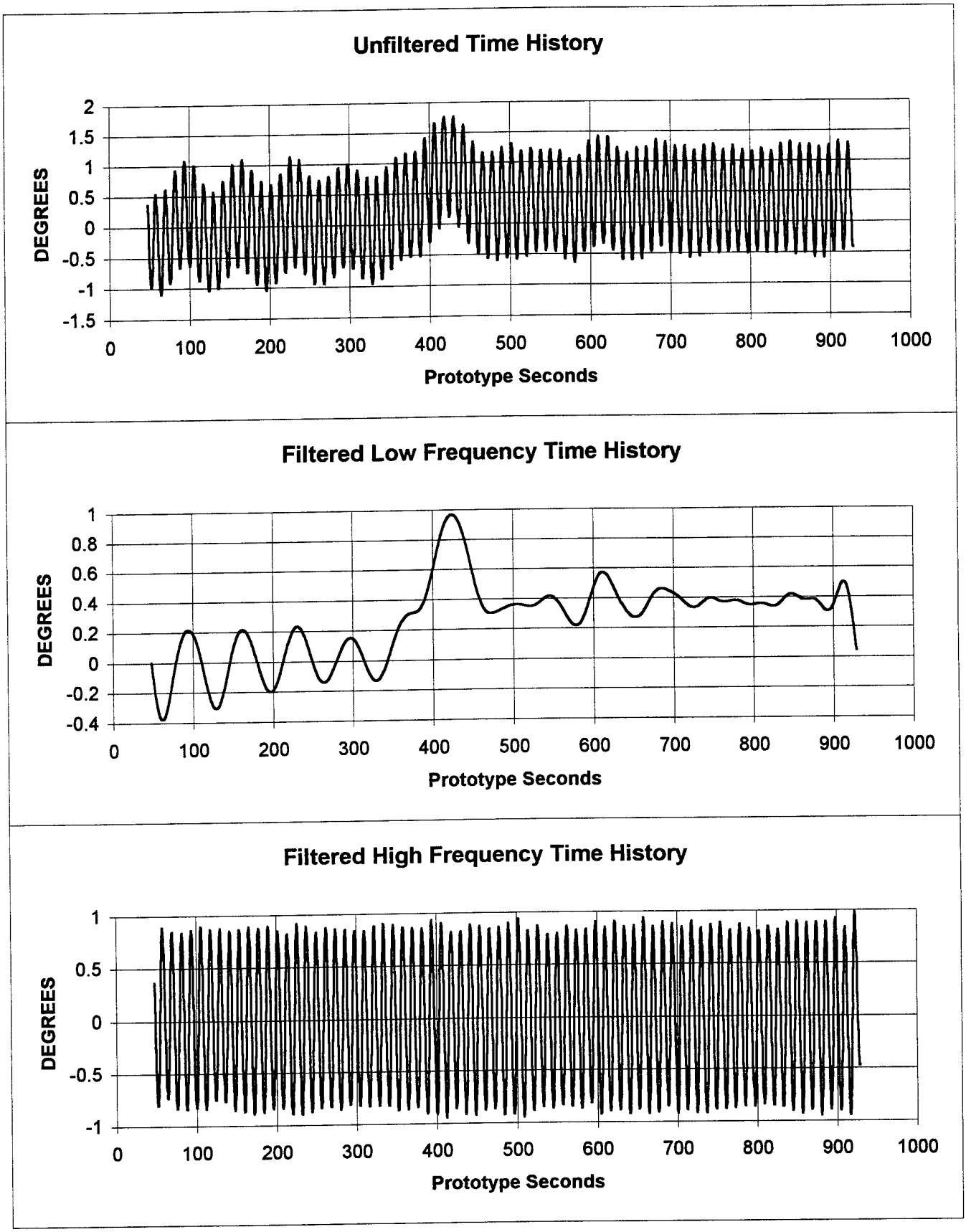
TEST A594 - BUOY 2 TENSION



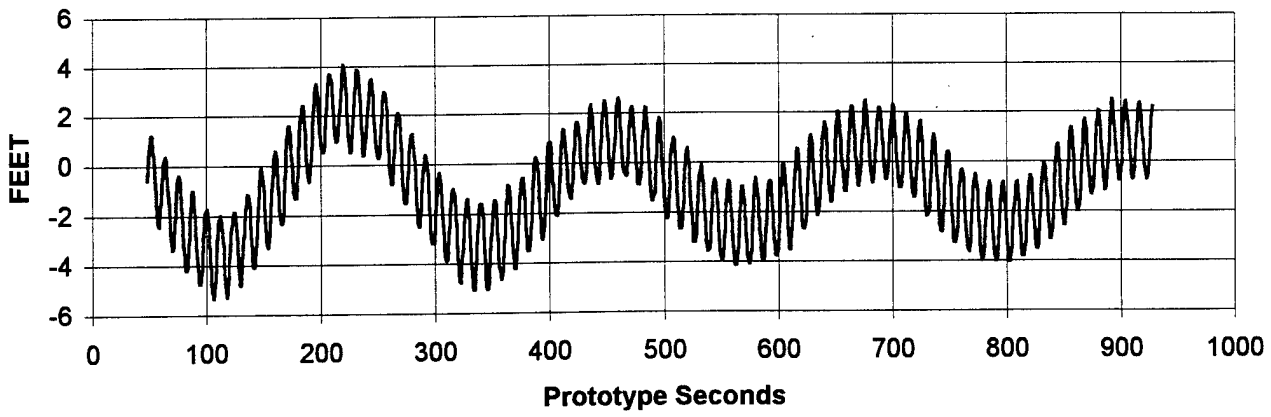



TEST A594 - PITCH

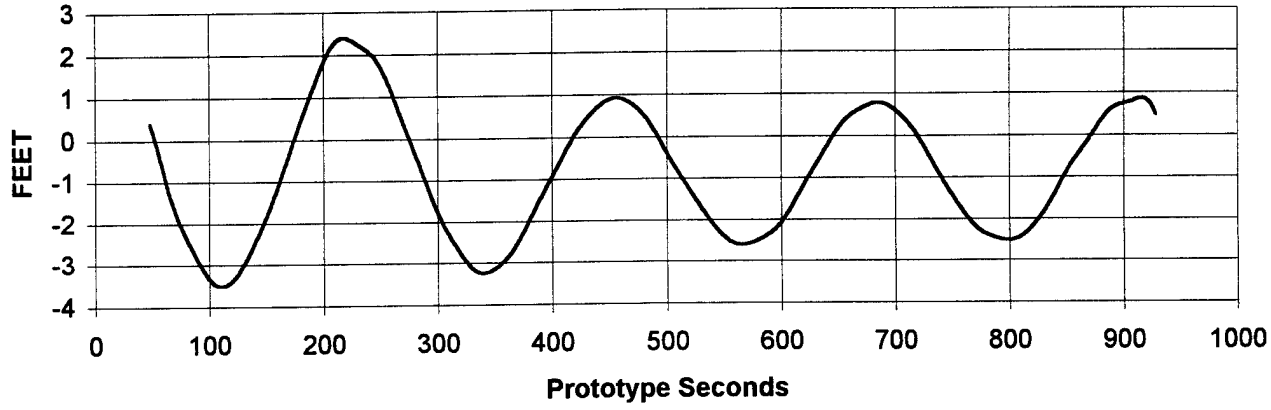


TEST A594 - PT SURGE

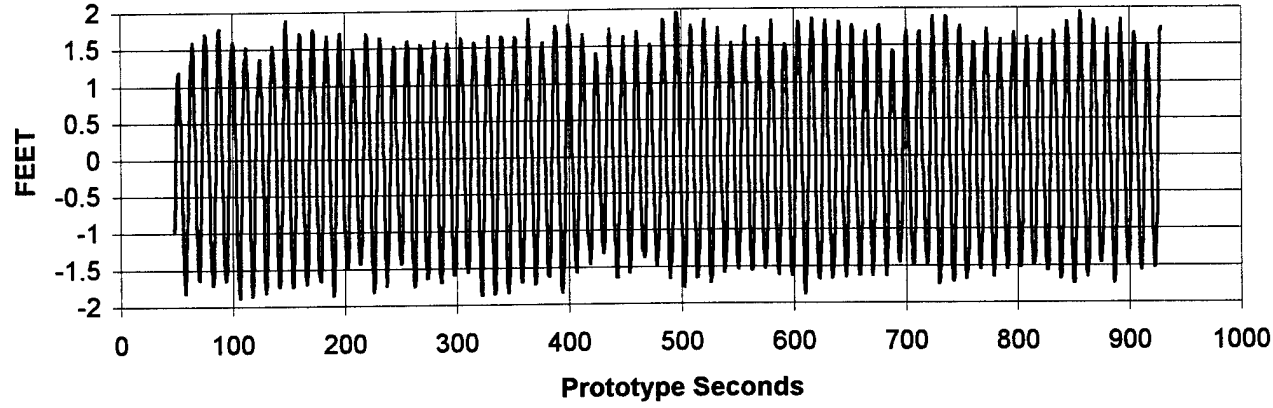
## Unfiltered Time History




## Filtered Low Frequency Time History

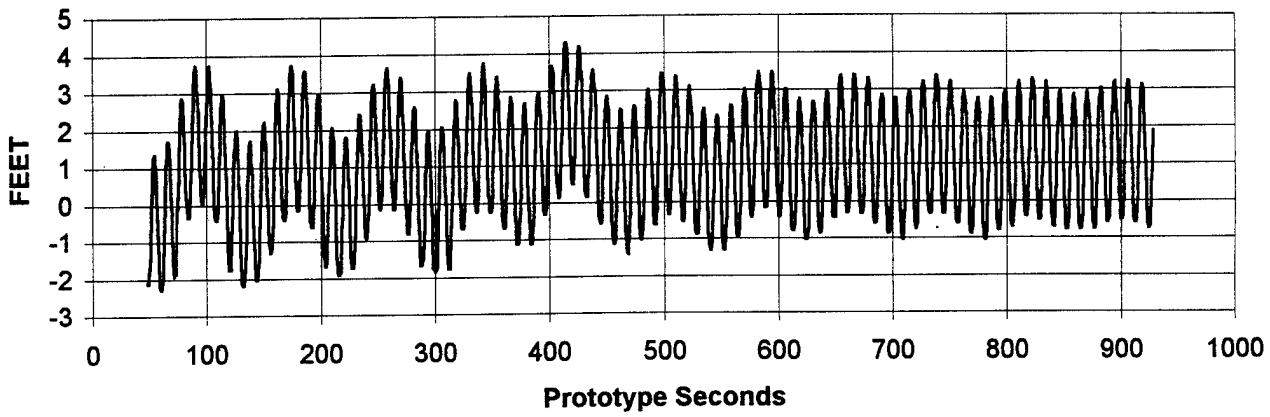



## Filtered High Frequency Time History

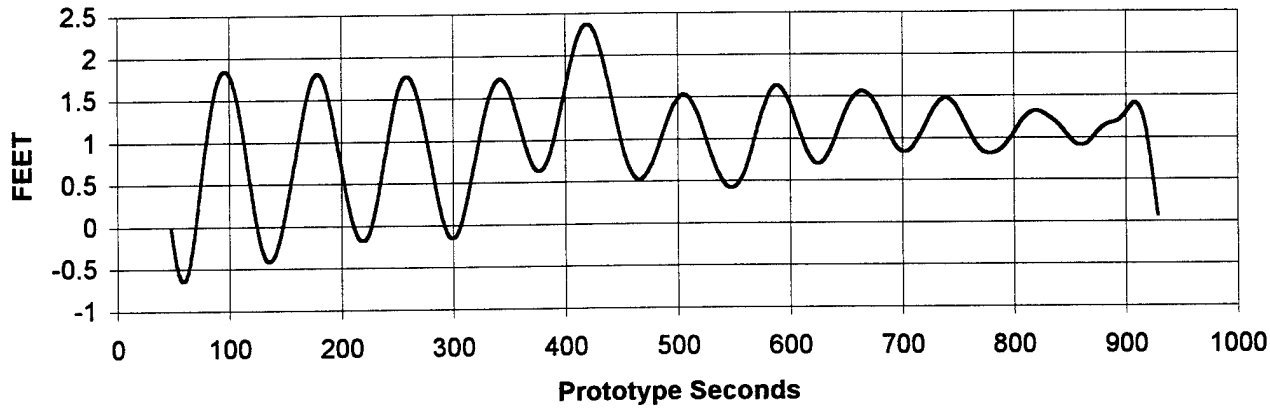


TEST A594 - PT HEAVE

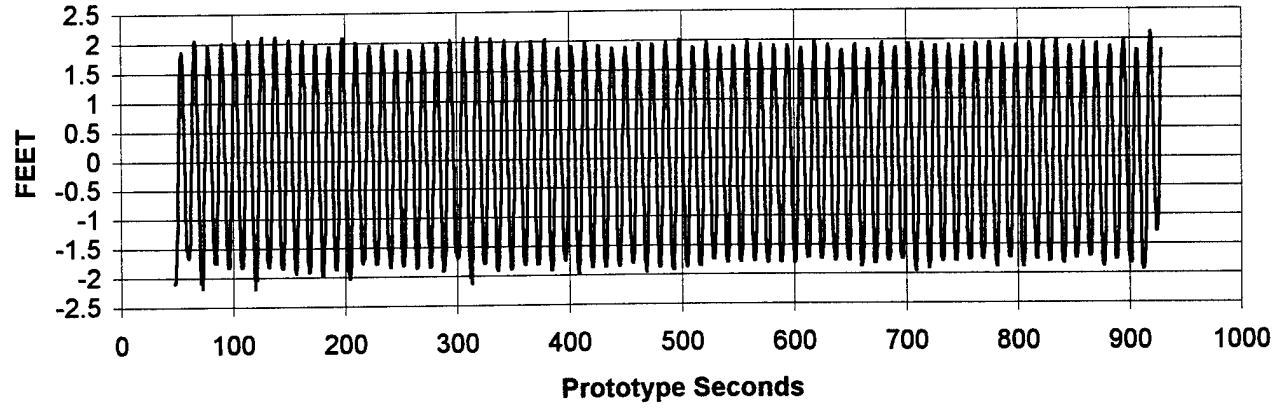
## Unfiltered Time History

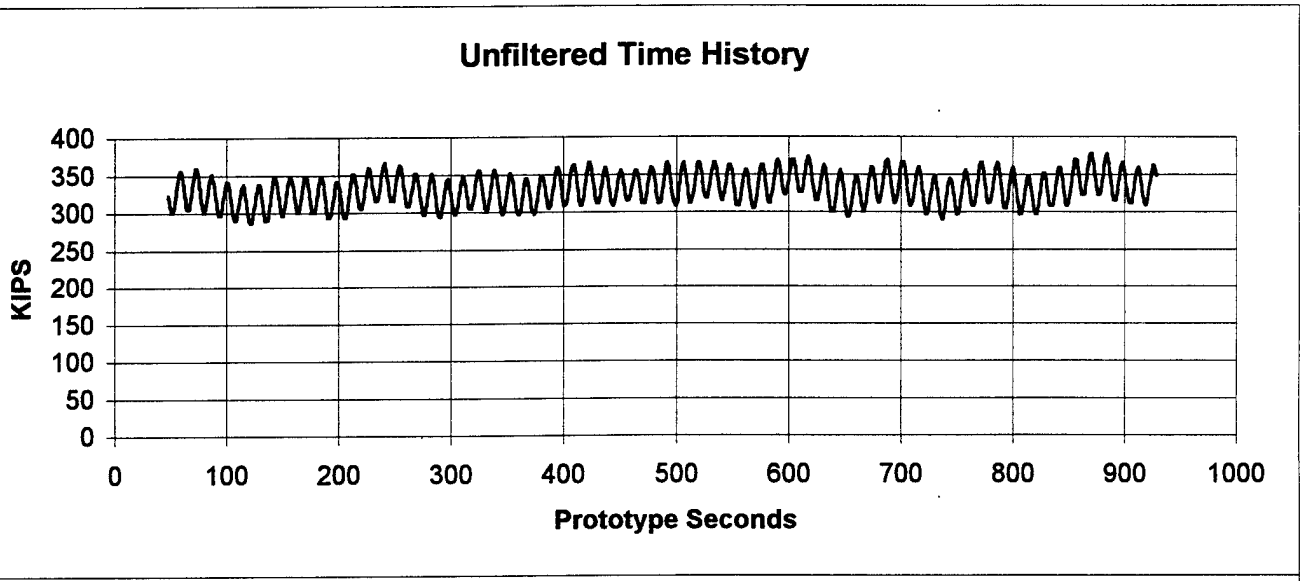


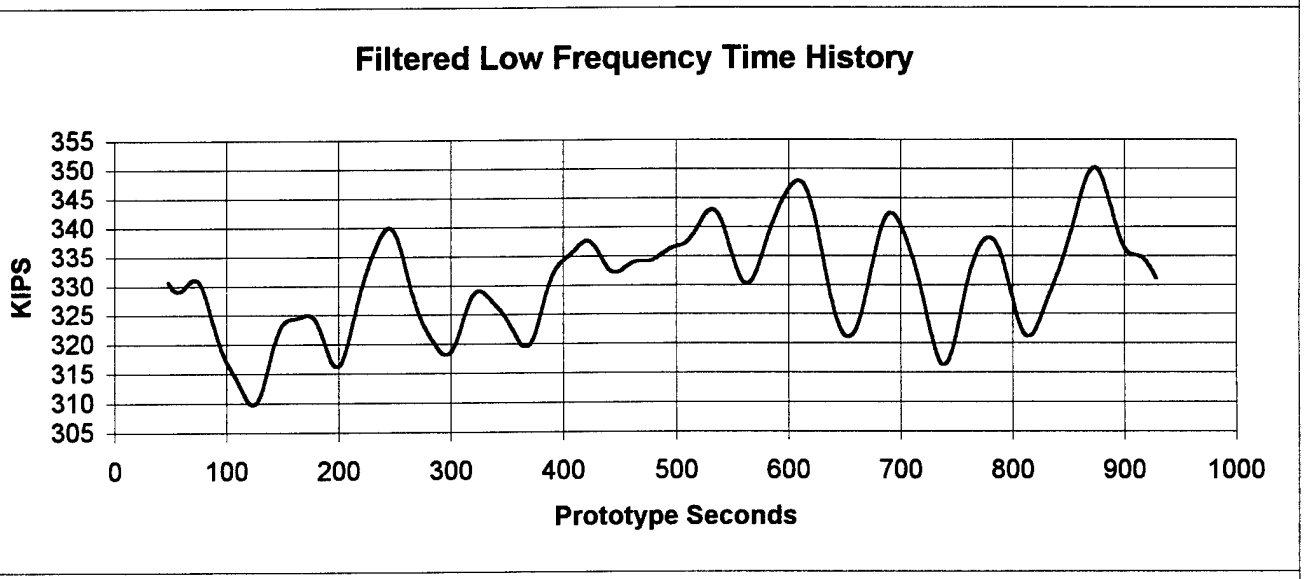

## Filtered Low Frequency Time History

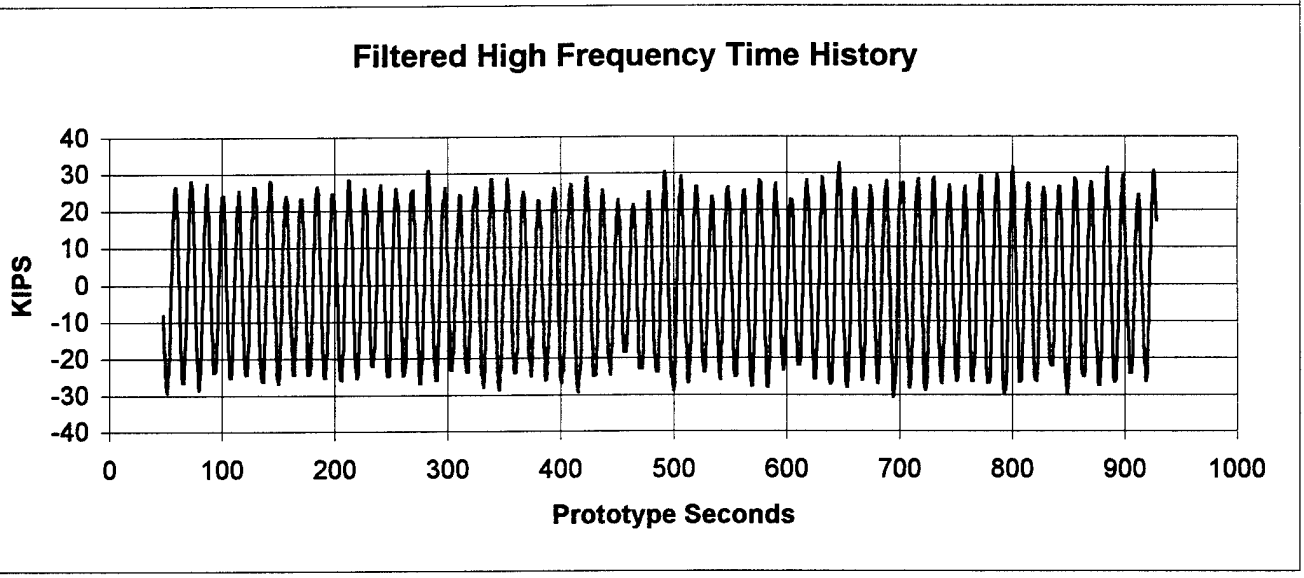



## Filtered High Frequency Time History

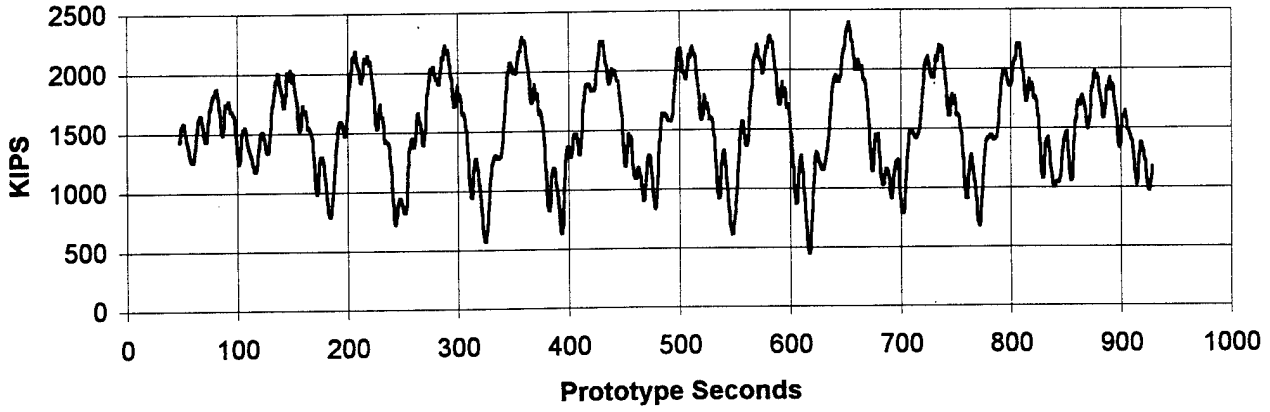


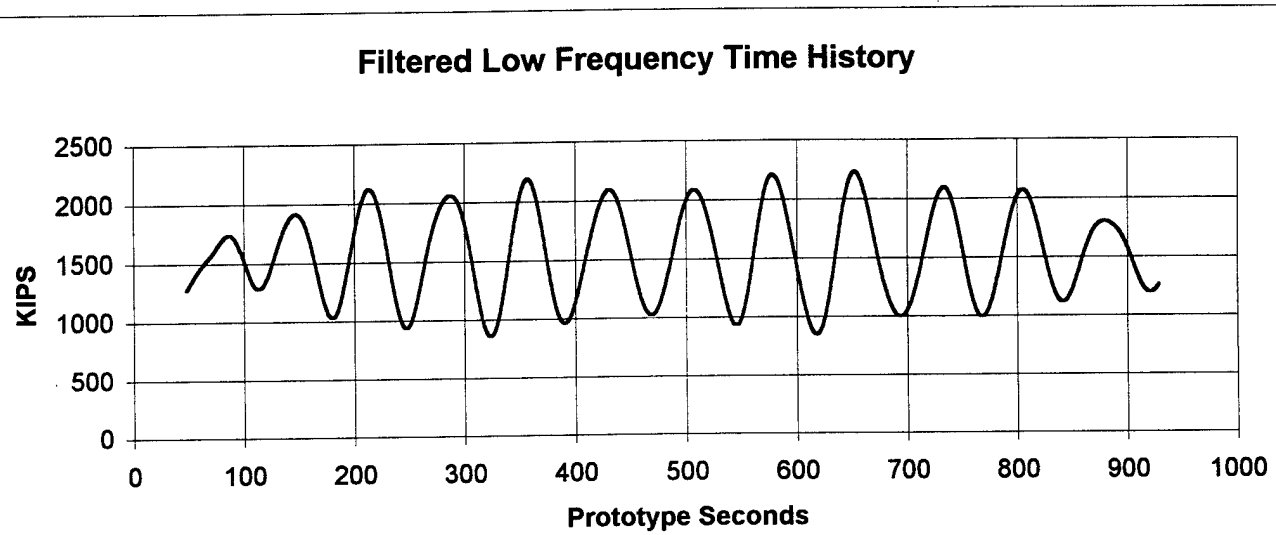

Unfiltered Time History
KIPS
400
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

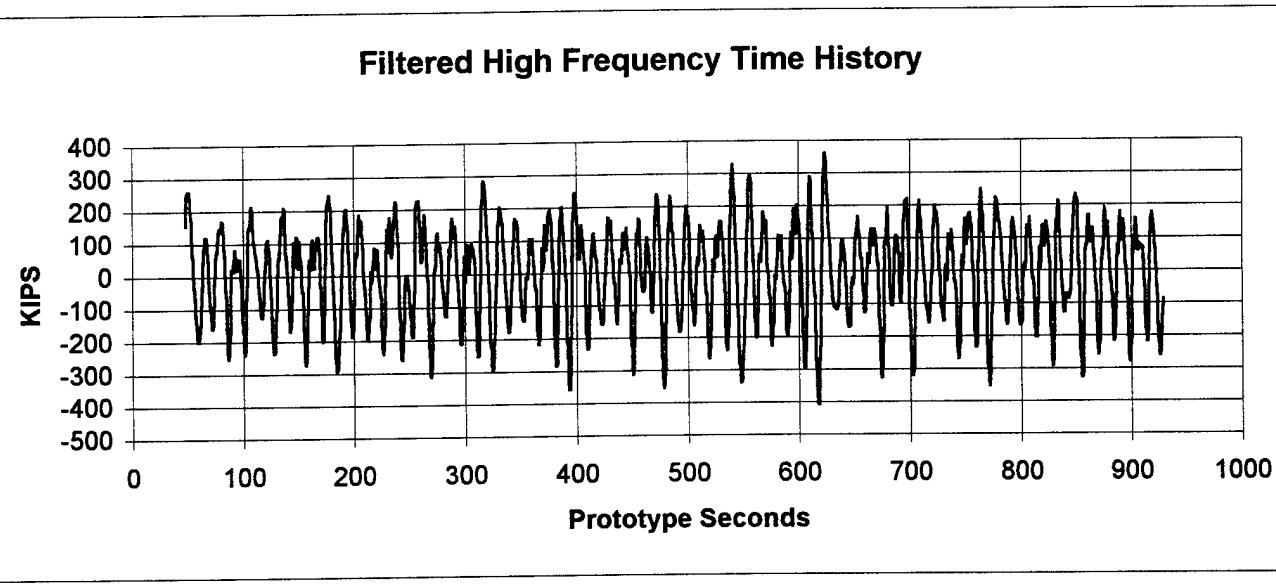

Filtered Low Frequency Time History
KIPS
355
350
345
340
335
330
325
320
315
310
305
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds


Filtered High Frequency Time History
KIPS
40
30
20
10
0
-10
-20
-30
-40
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

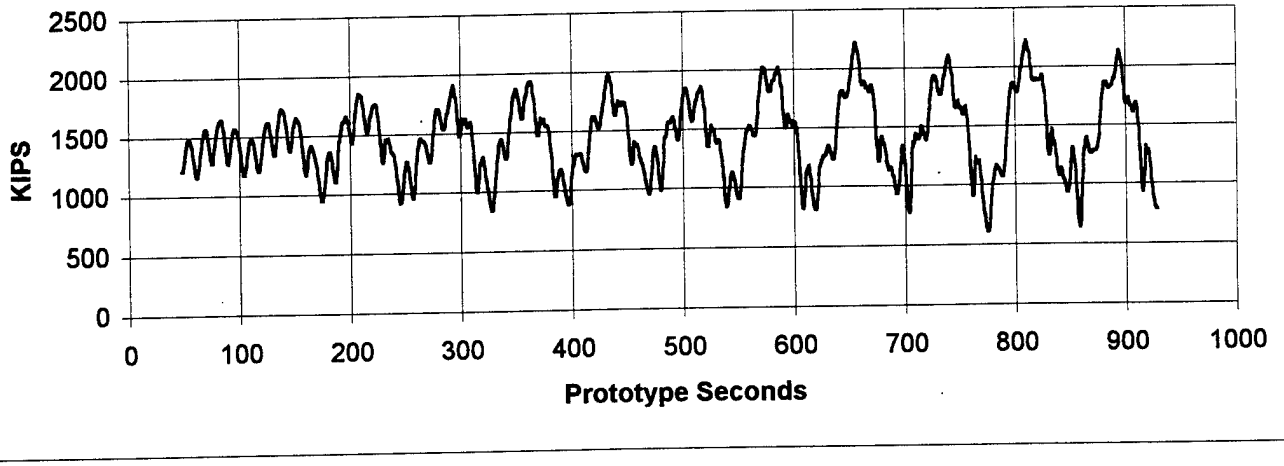
TEST A595 - BUOY 1 TENSION

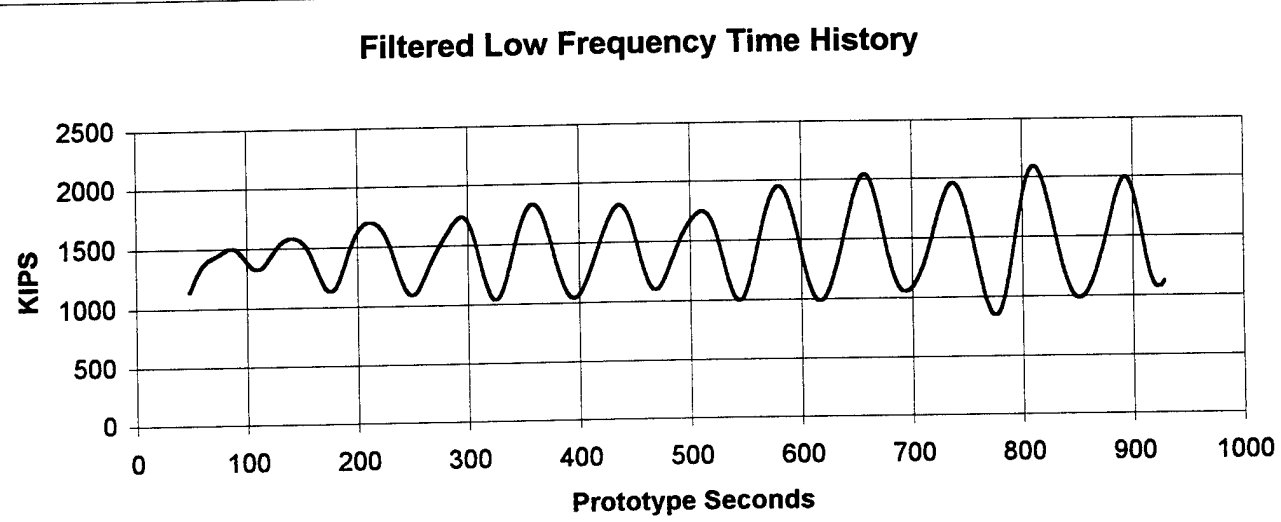


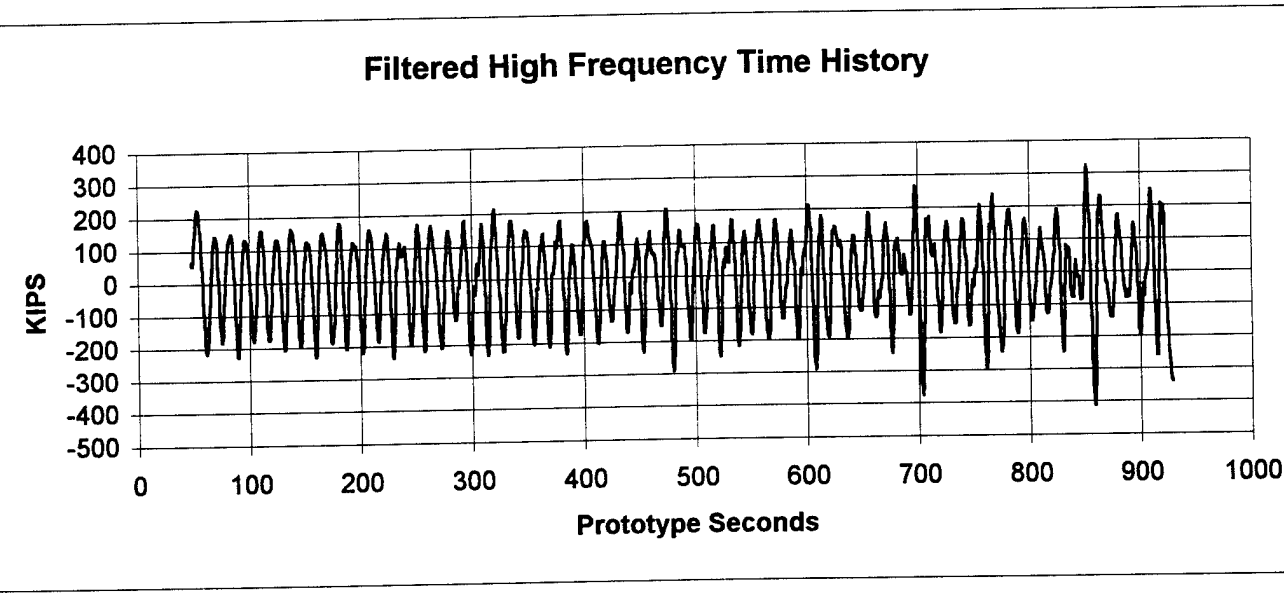



TEST A595 - BUOY 2 TENSION

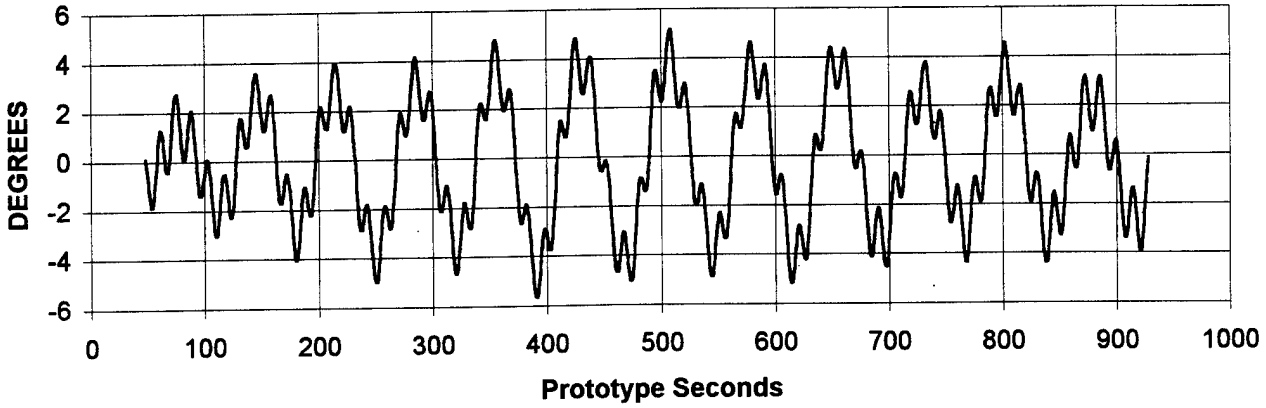


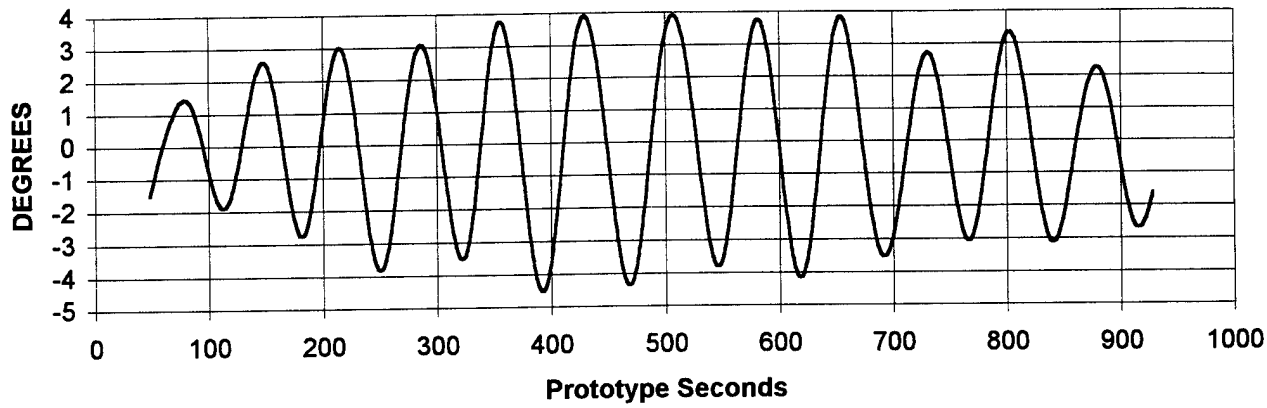



TEST A595 - PITCH

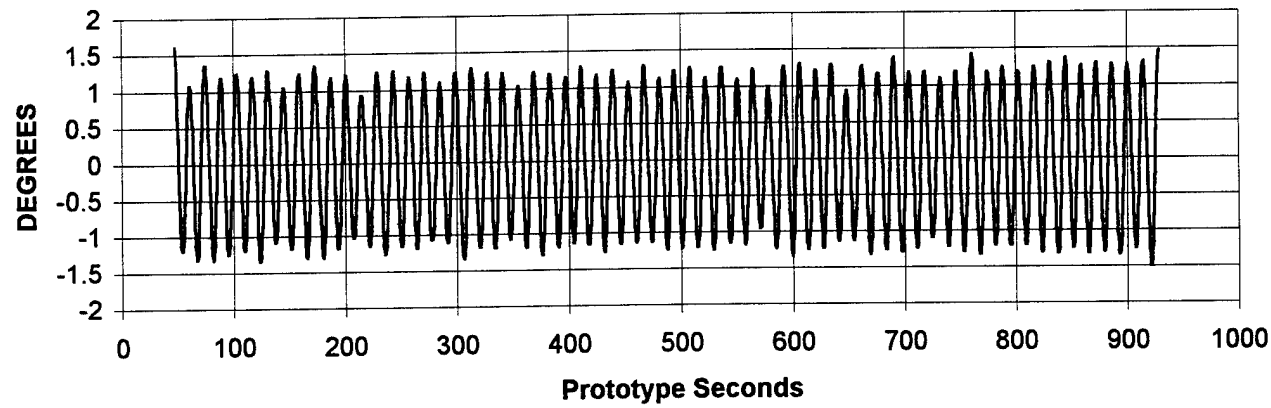
## Unfiltered Time History



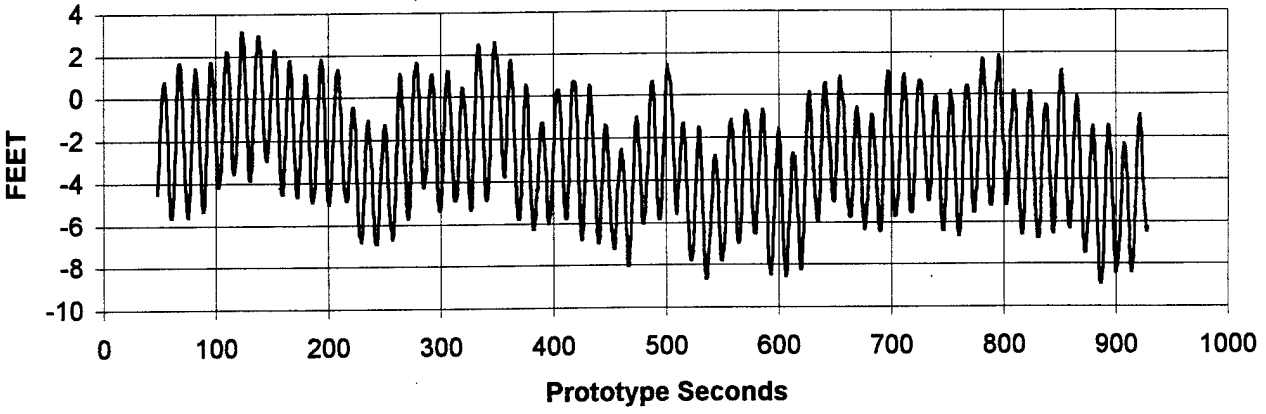

## Filtered Low Frequency Time History

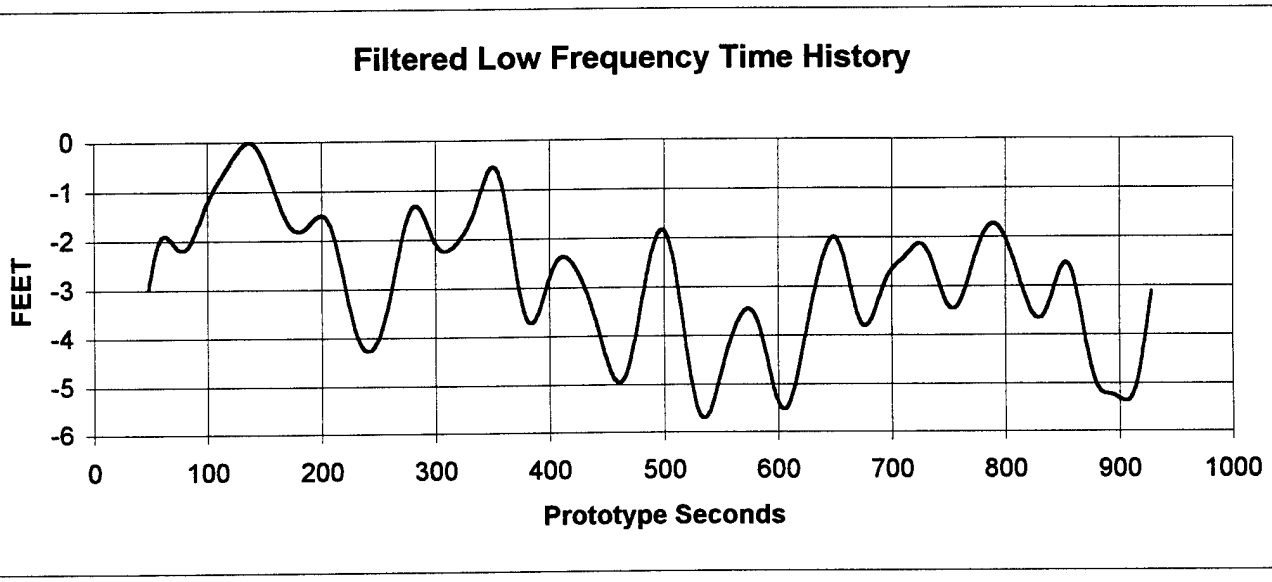


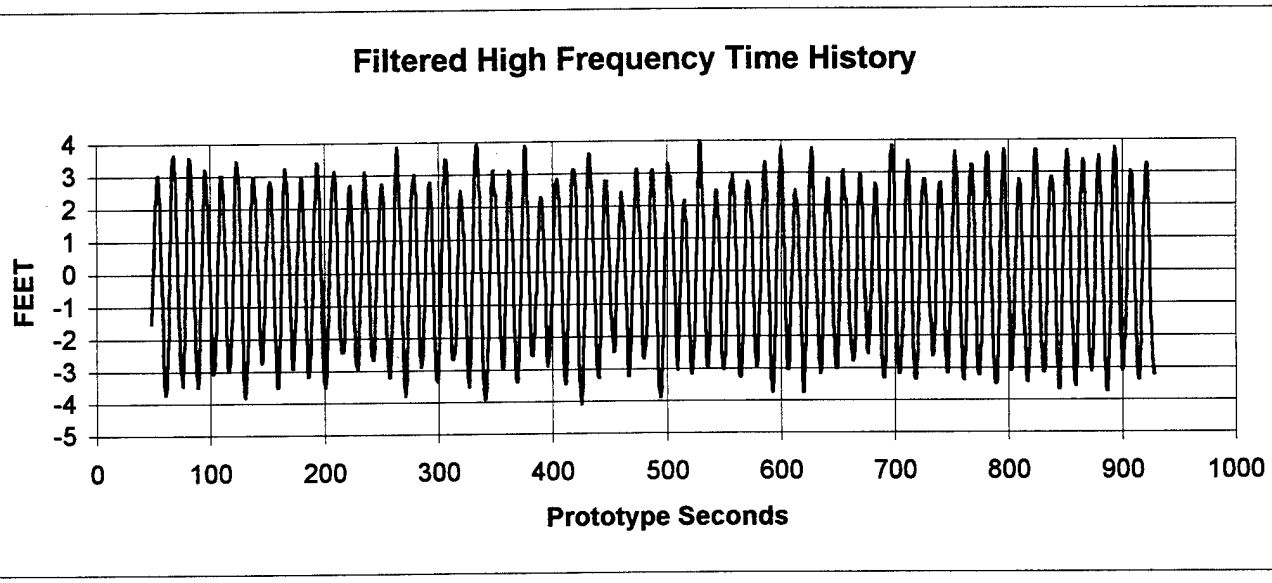

## Filtered High Frequency Time History



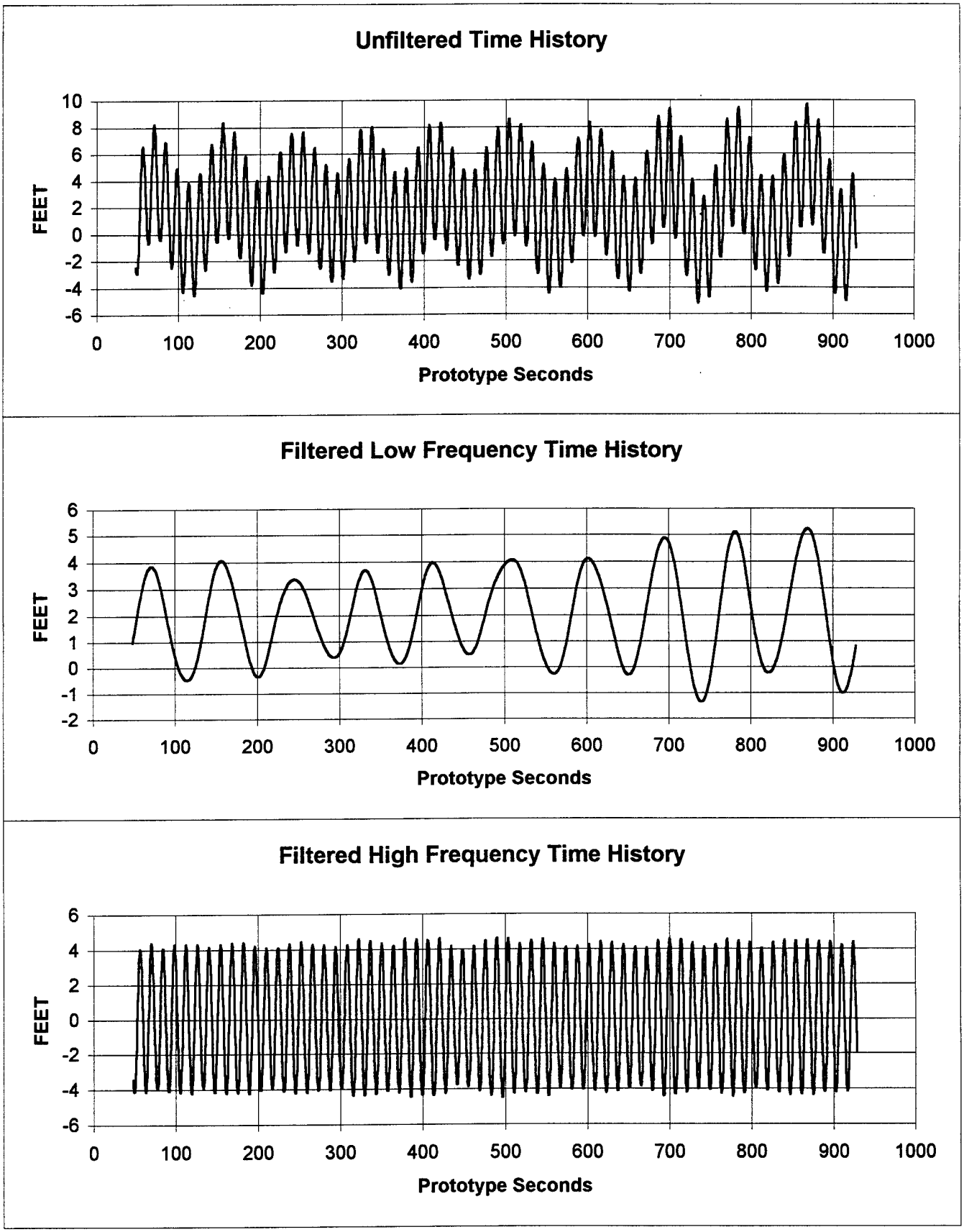
TEST A595 - PT SURGE

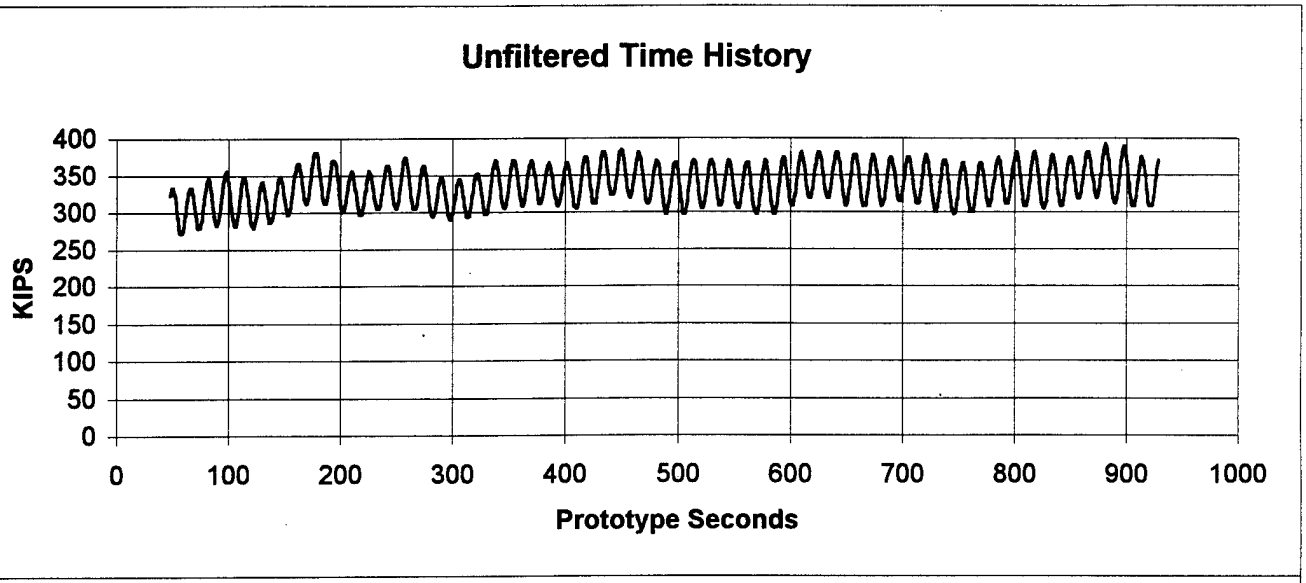


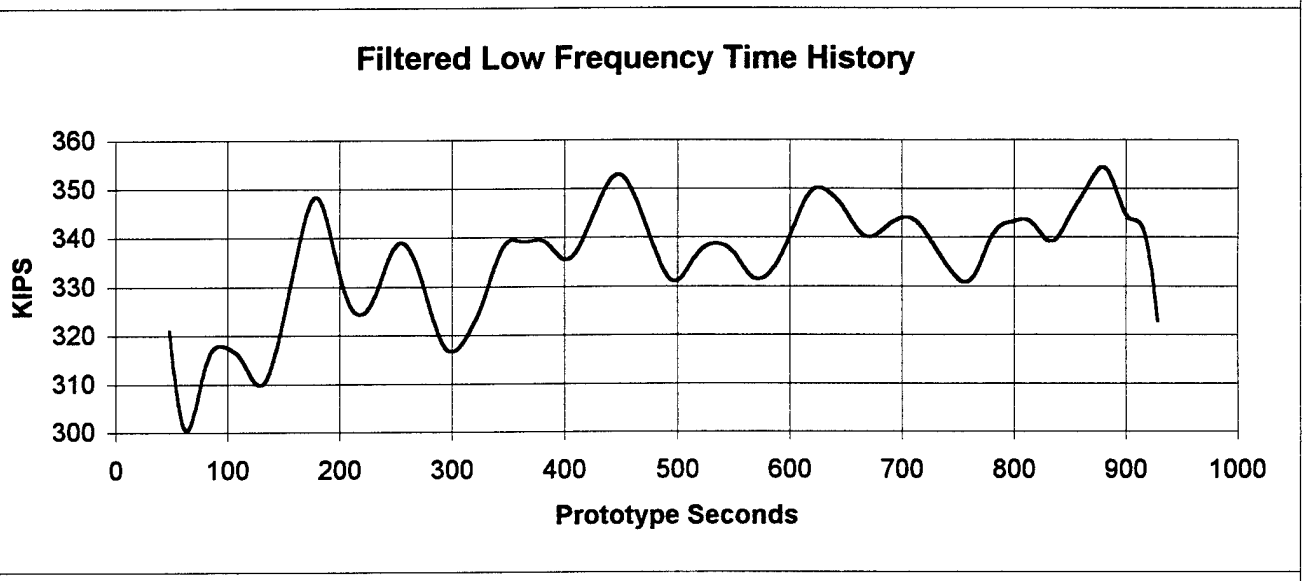



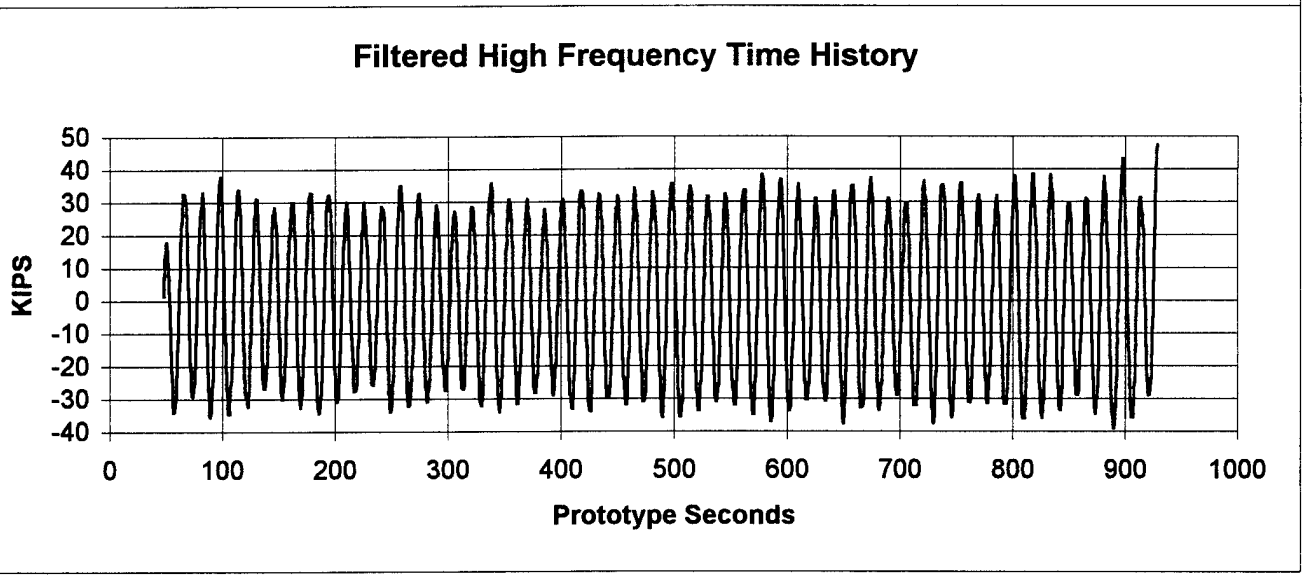



TEST A595 - PT HEAVE

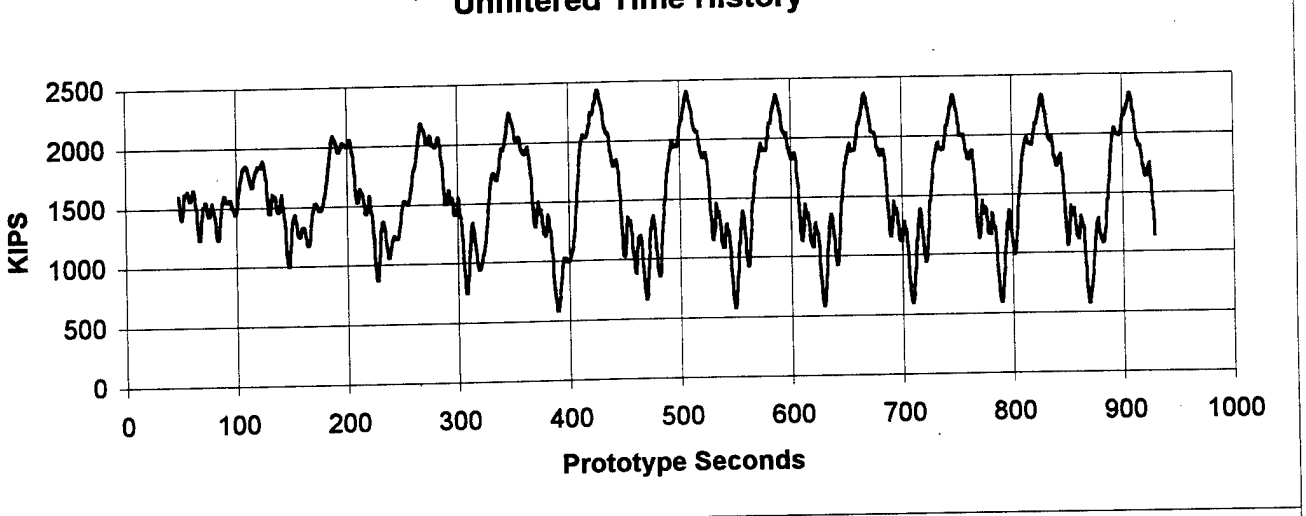


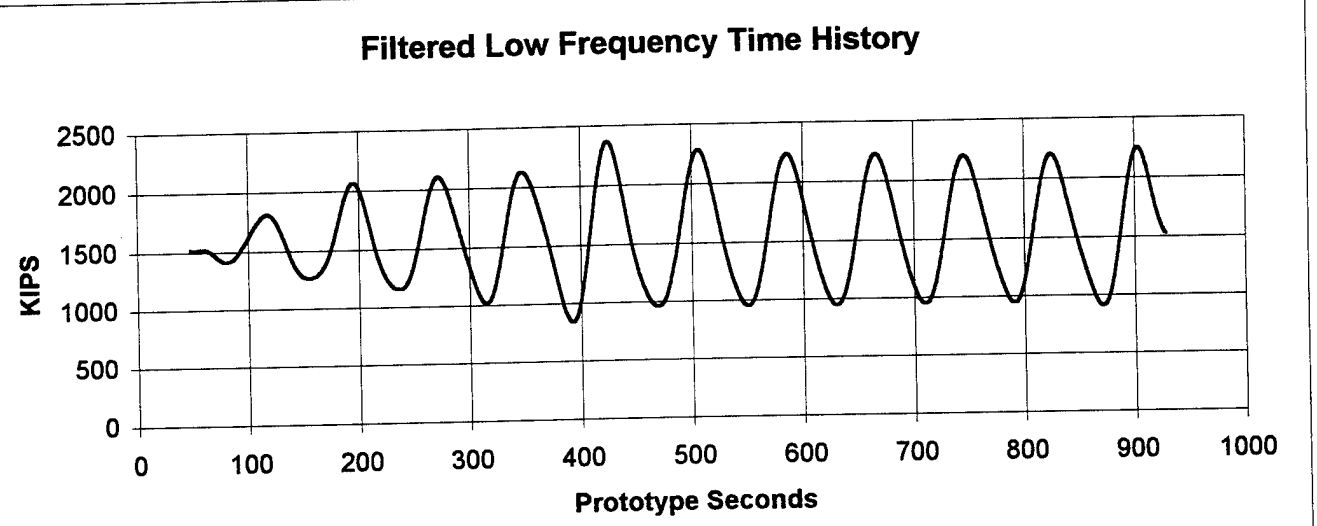

Unfiltered Time History
KIPS
400
350
300
250
200
150
100
50
0
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

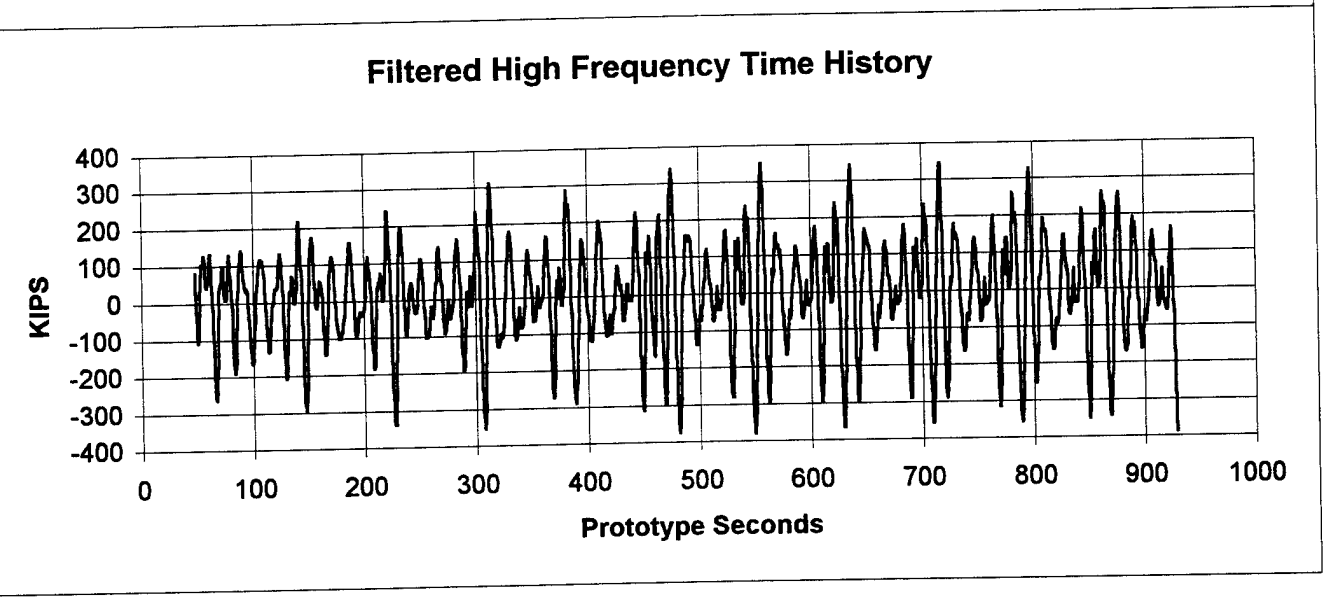

Filtered Low Frequency Time History
KIPS
360
350
340
330
320
310
300
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds


Filtered High Frequency Time History
KIPS
50
40
30
20
10
0
-10
-20
-30
-40
0
100
200
300
400
500
600
700
800
900
1000
Prototype Seconds

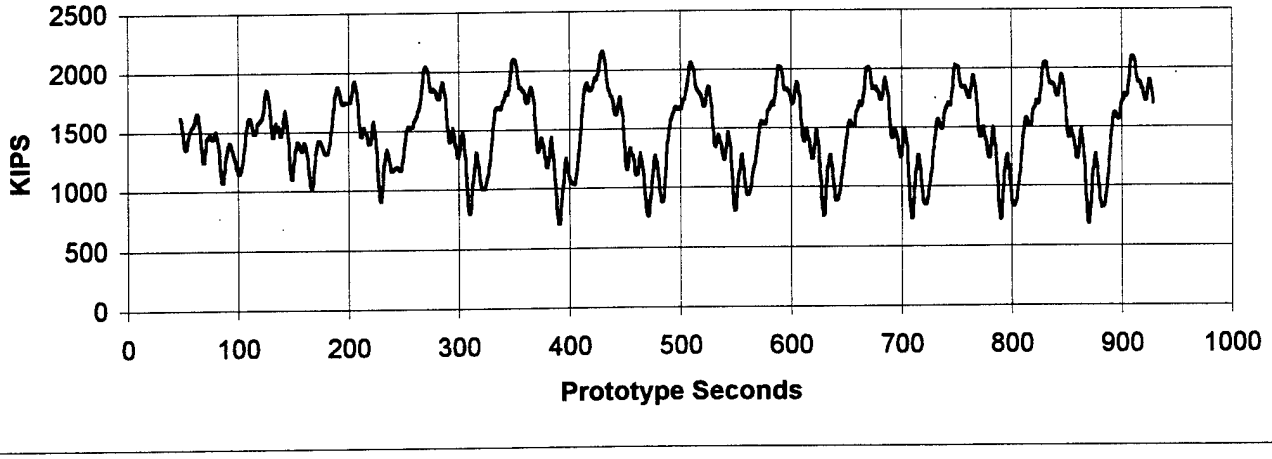
TEST A596 - BUOY 1 TENSION

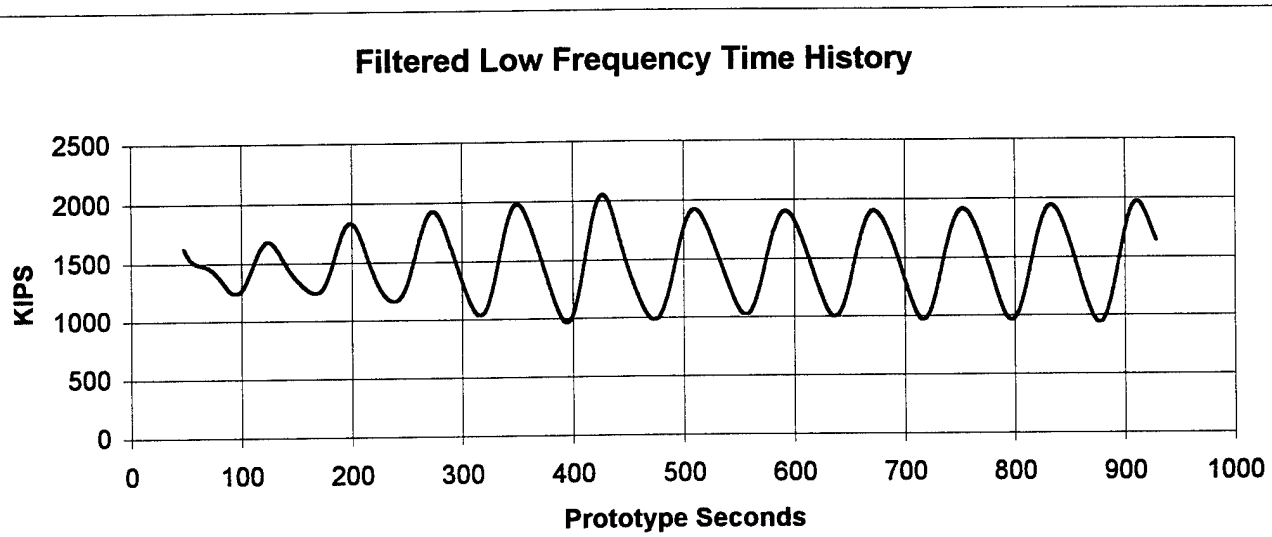


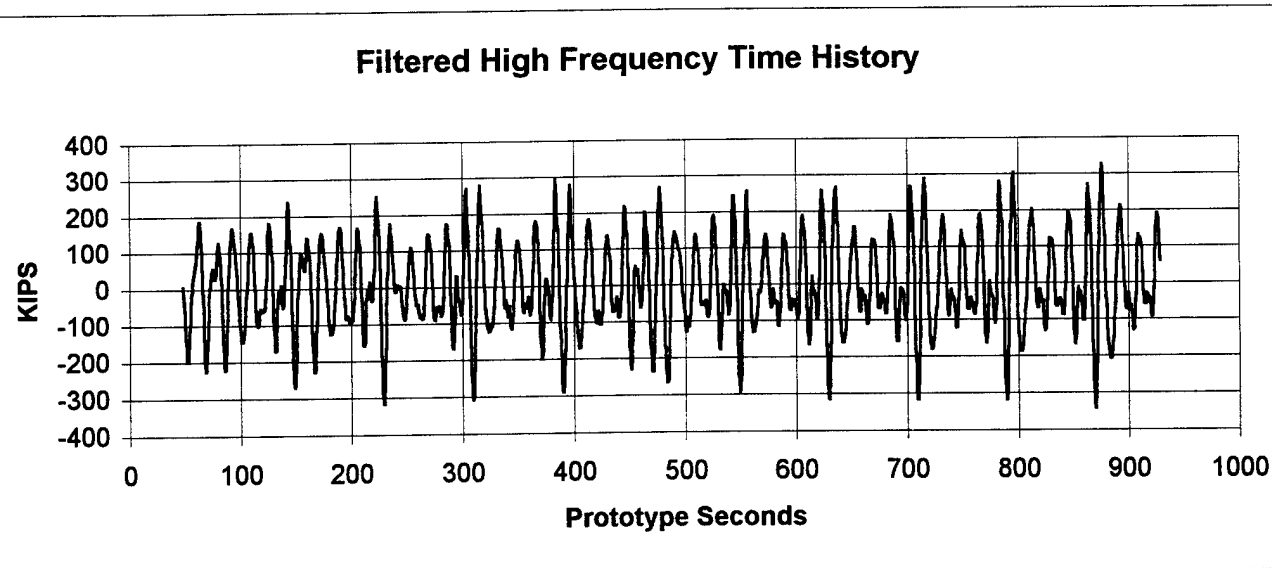



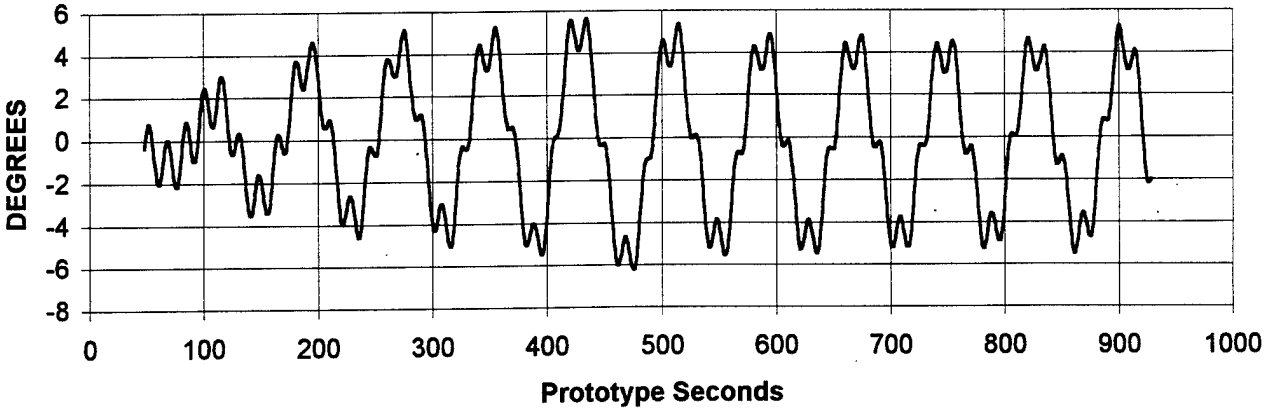
TEST A596 - BUOY 2 TENSION

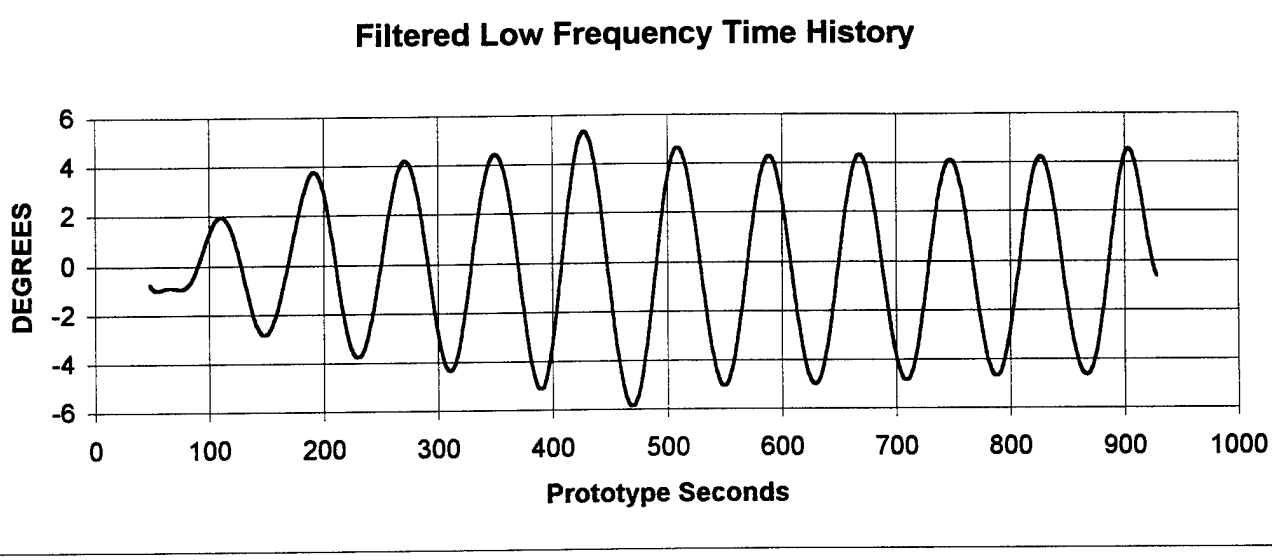


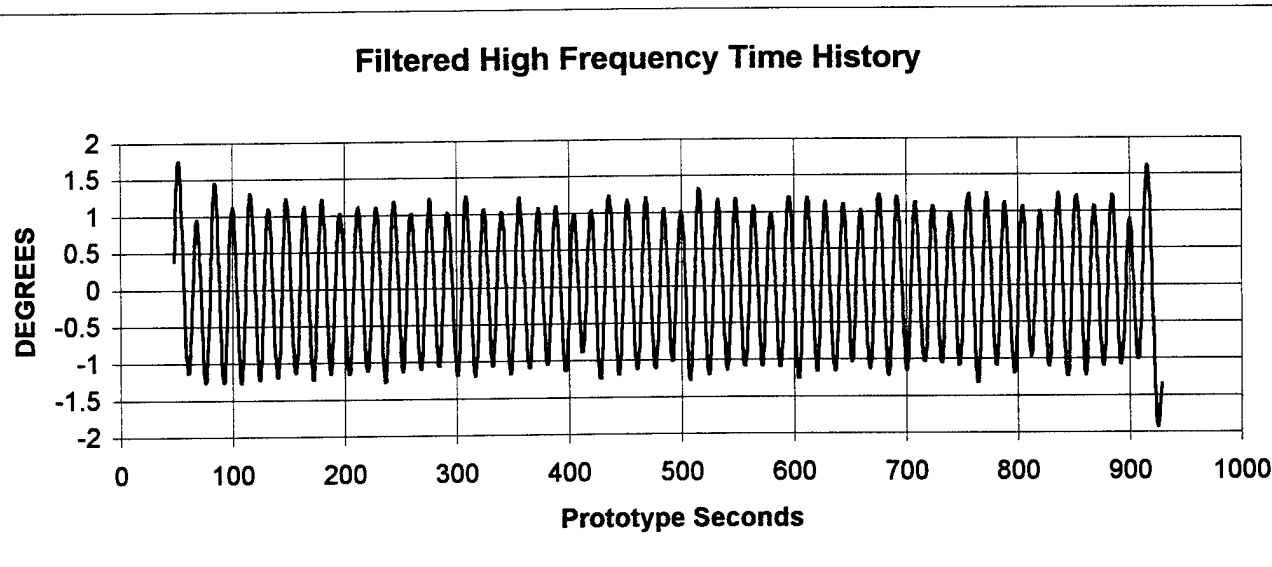



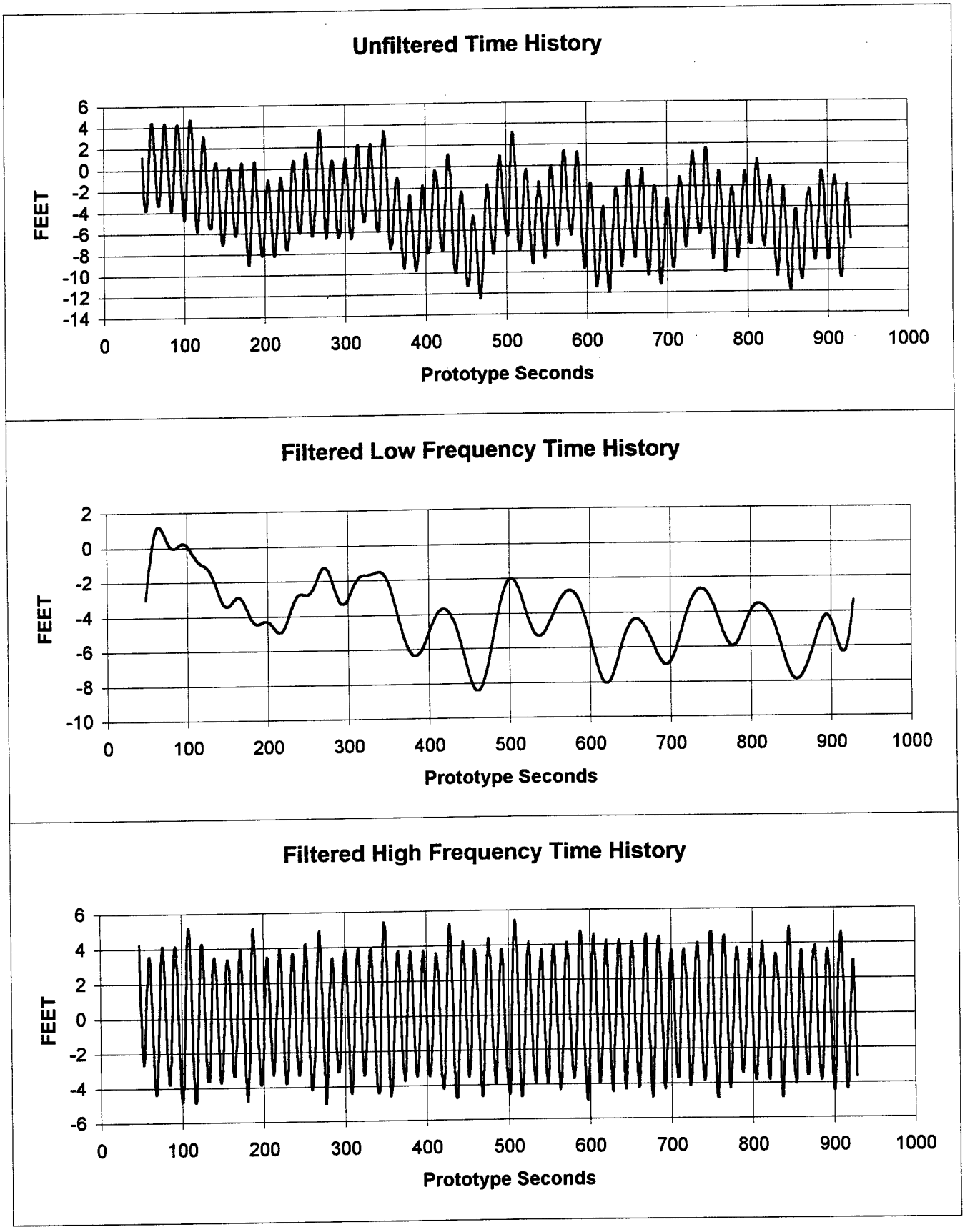
TEST A596 - PITCH



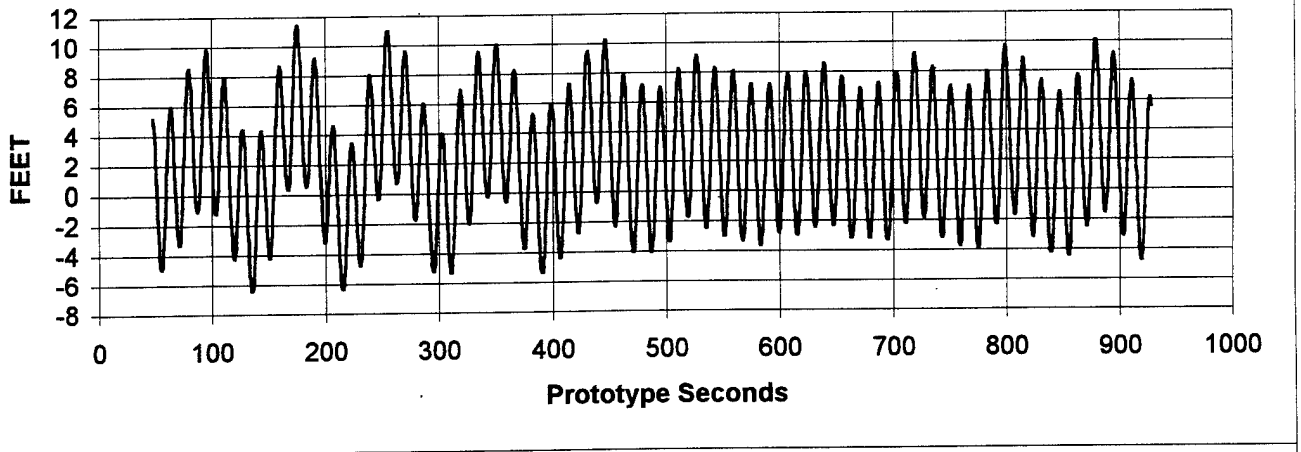



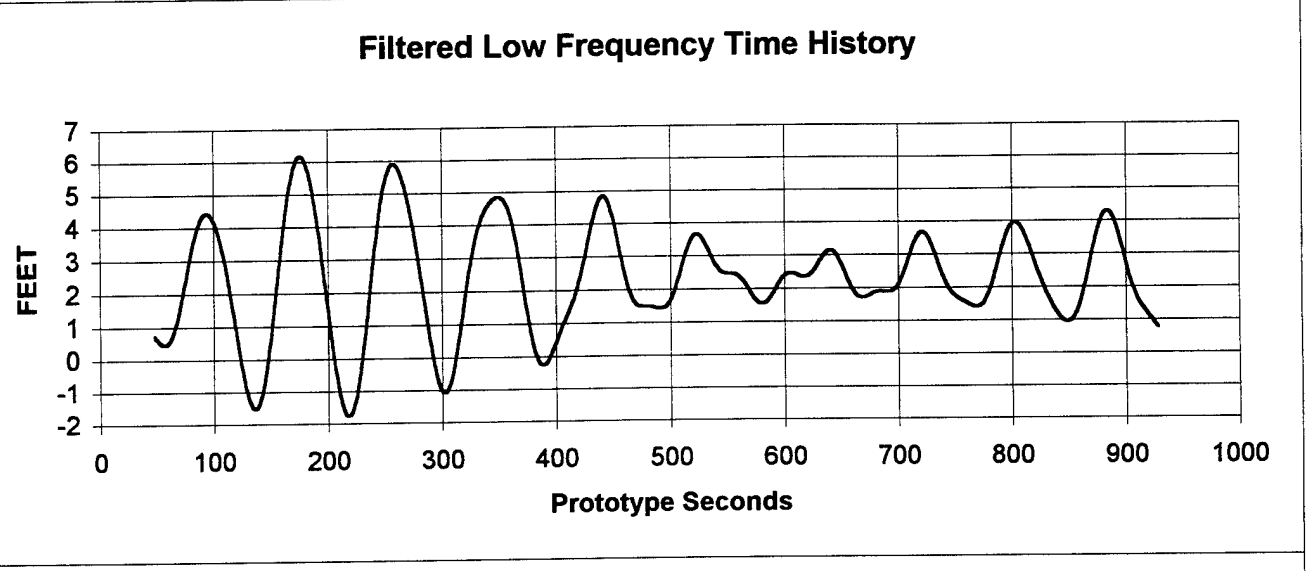



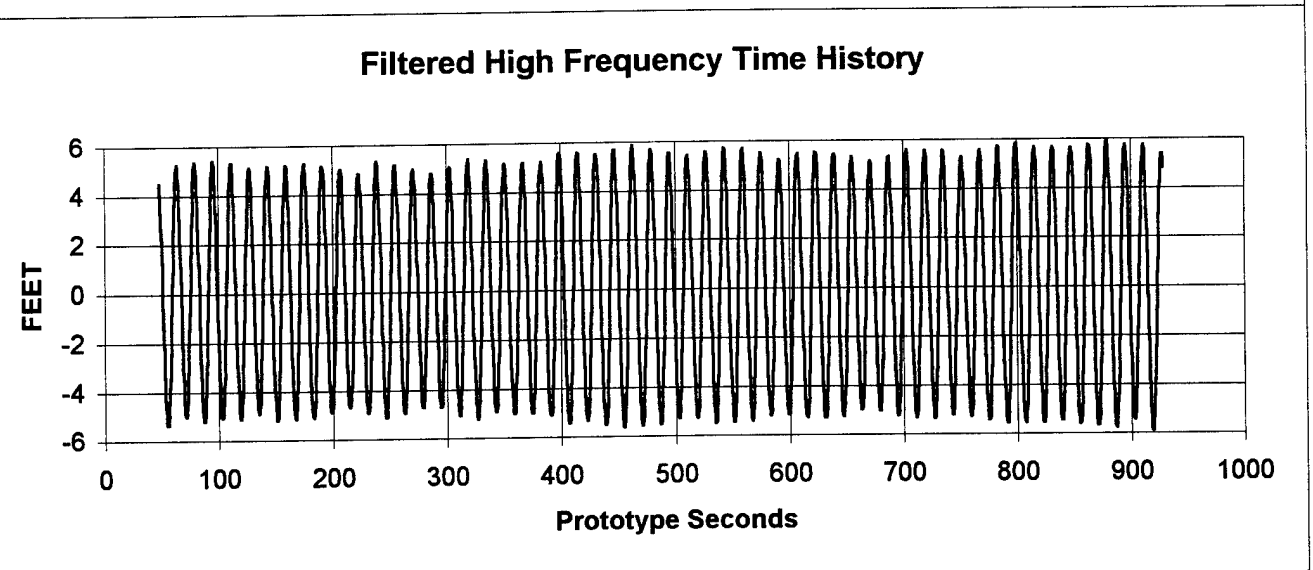
TEST A596 - PT SURGE



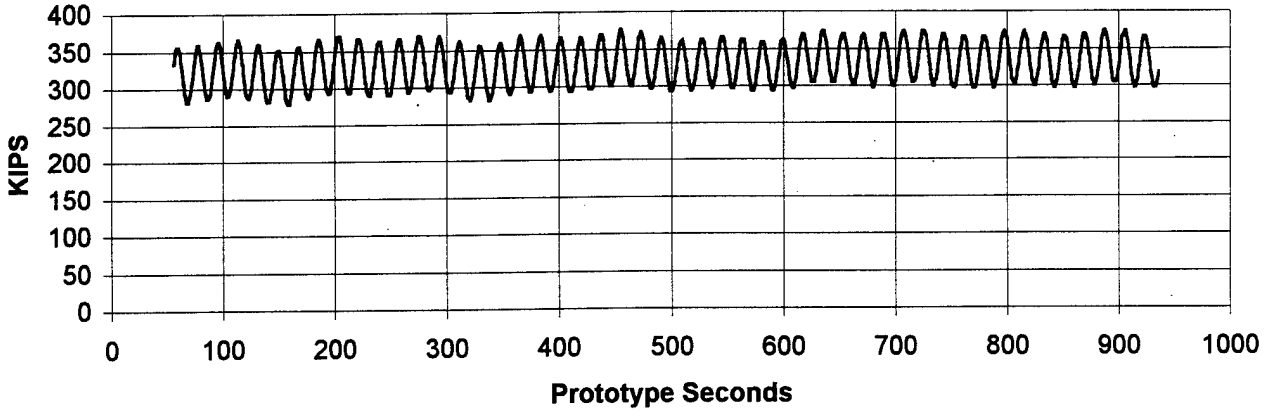
TEST A596 - PT HEAVE



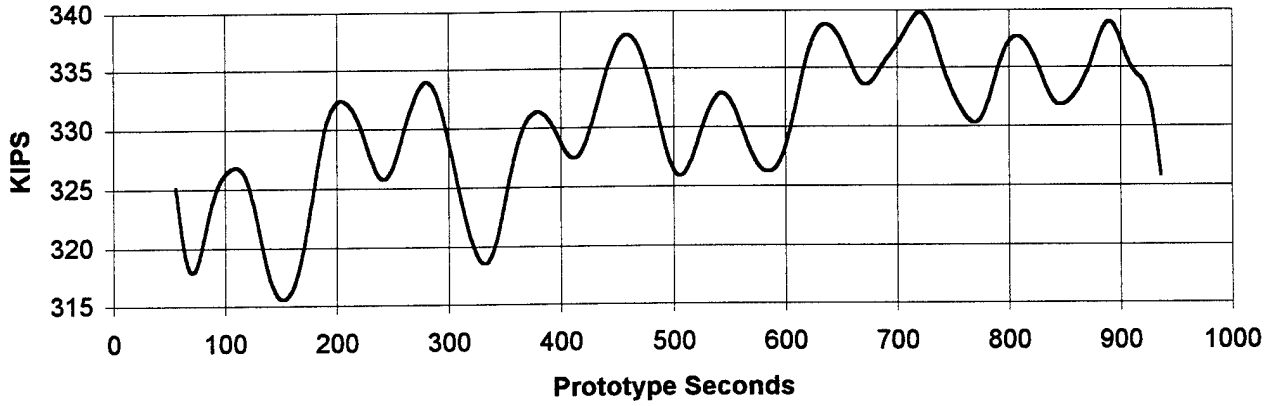



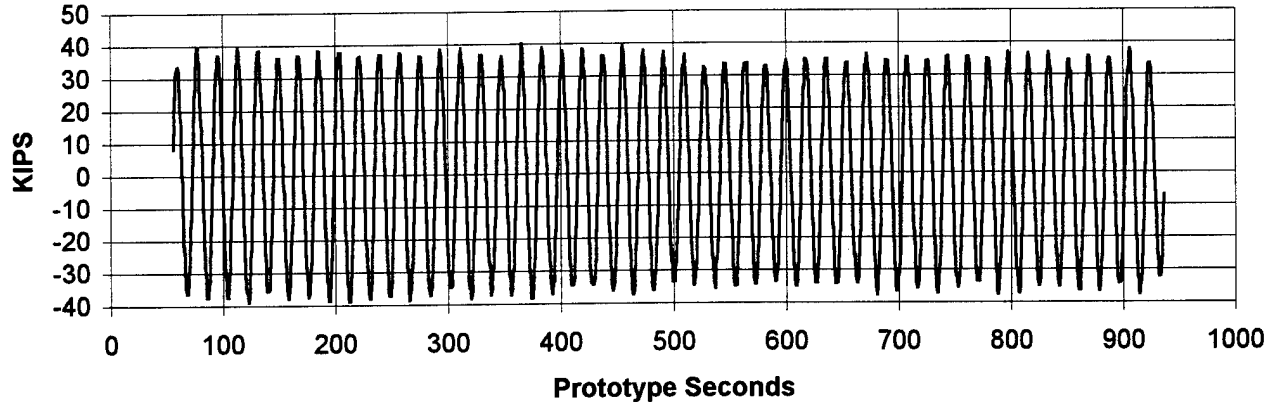
## Unfiltered Time History



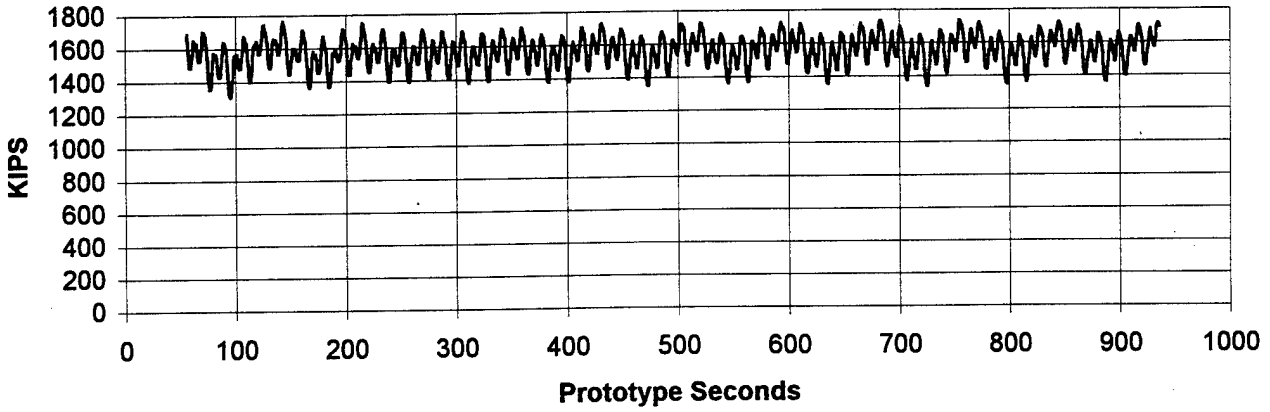

## Filtered Low Frequency Time History

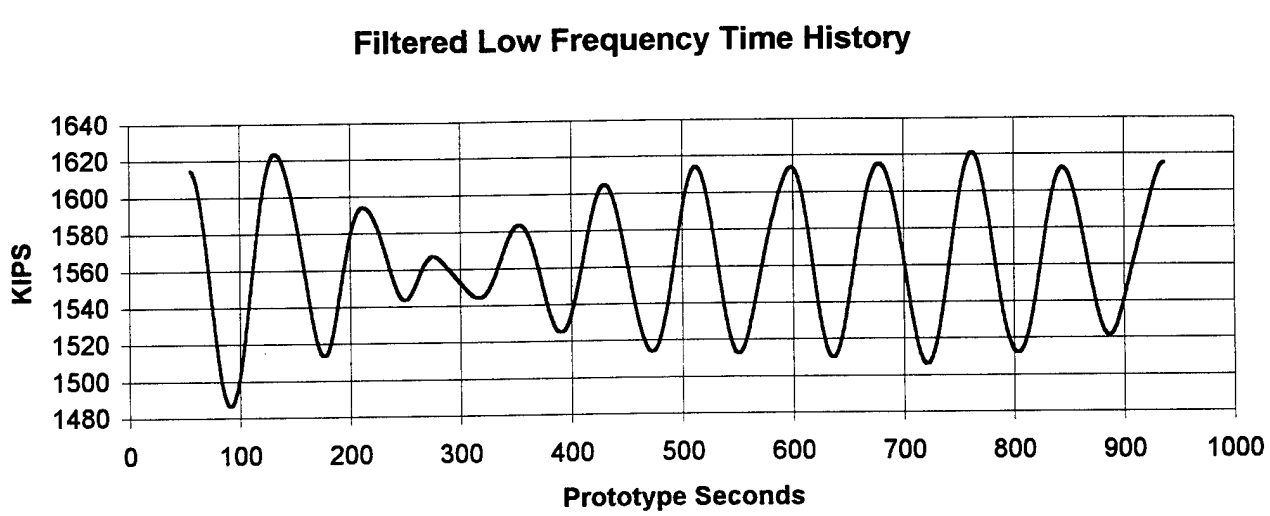


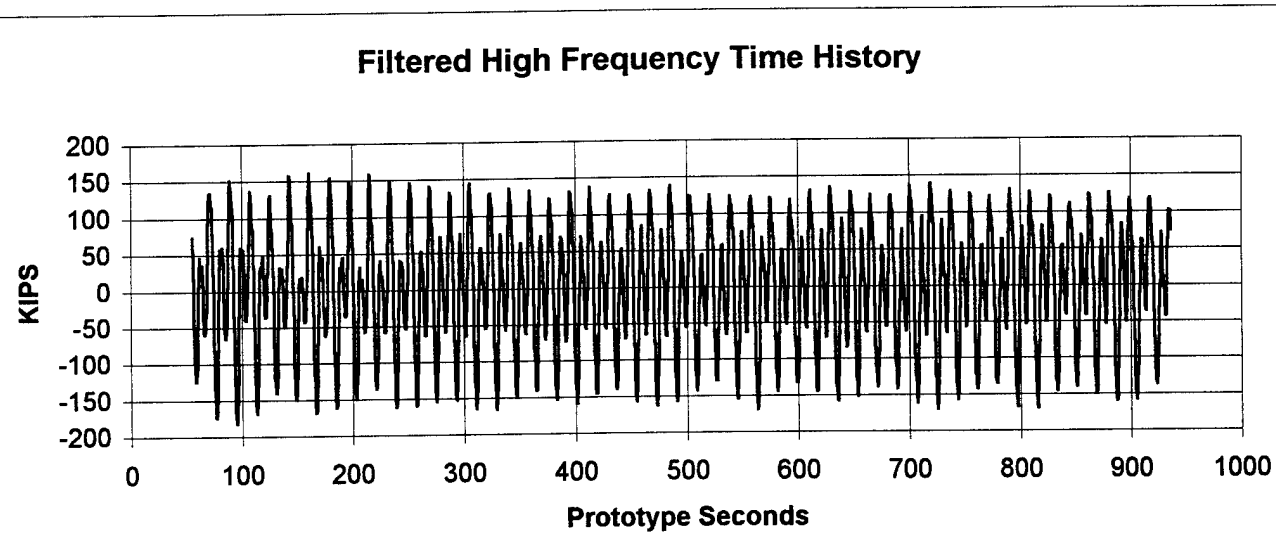

## Filtered High Frequency Time History



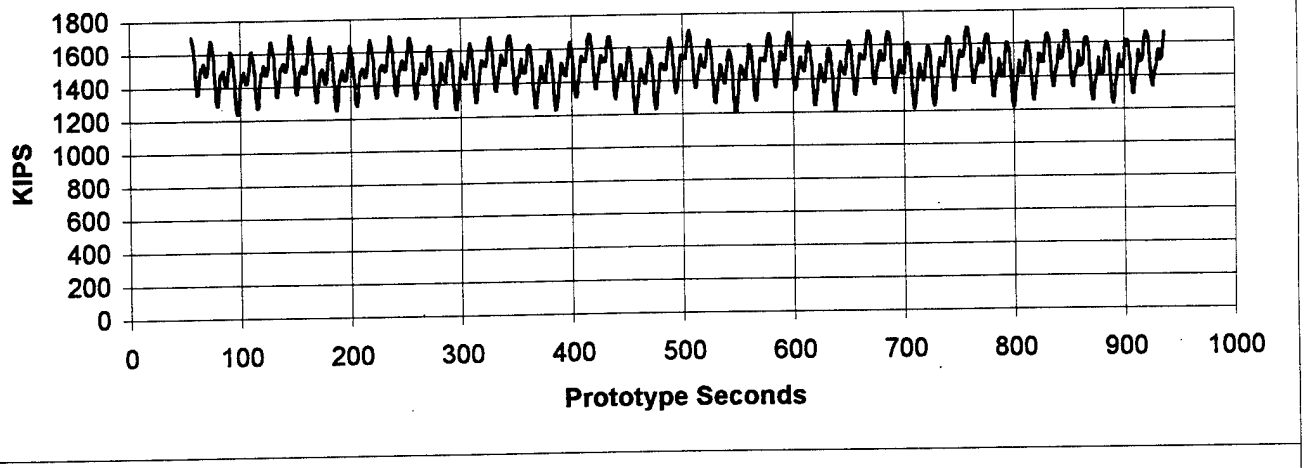
TEST A597 - BUOY 1 TENSION

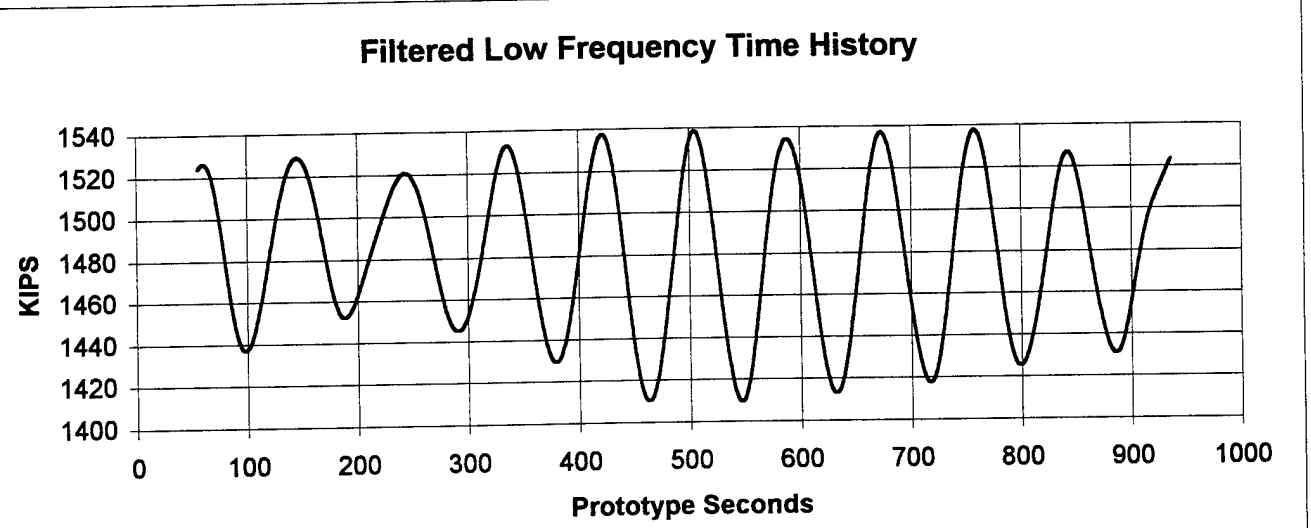


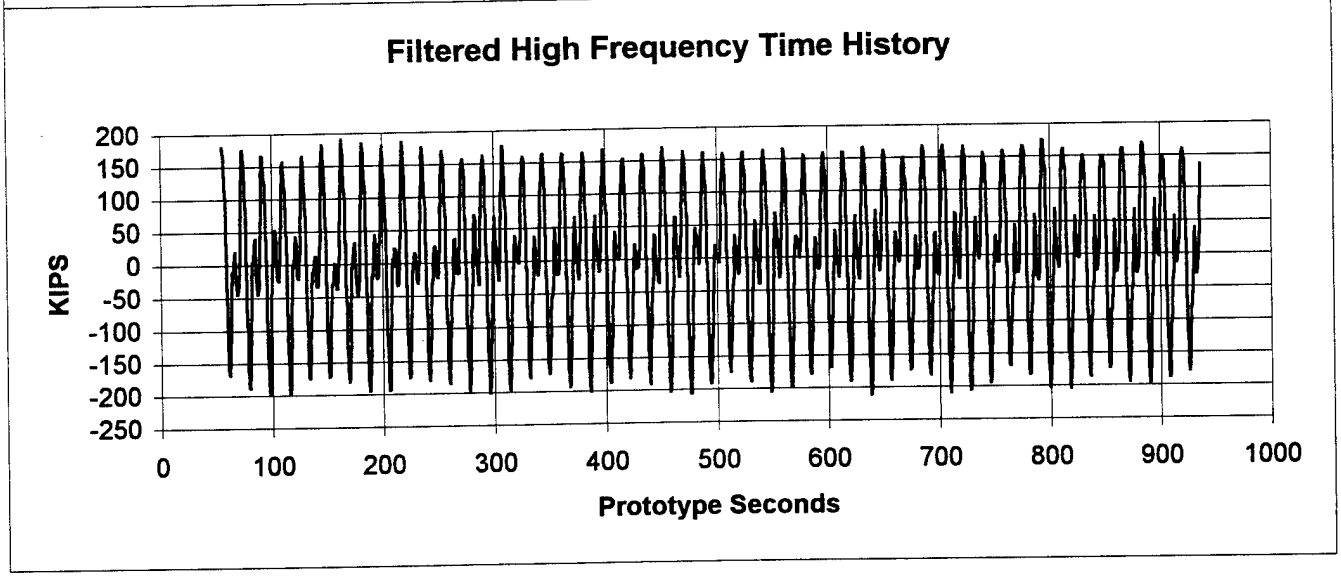



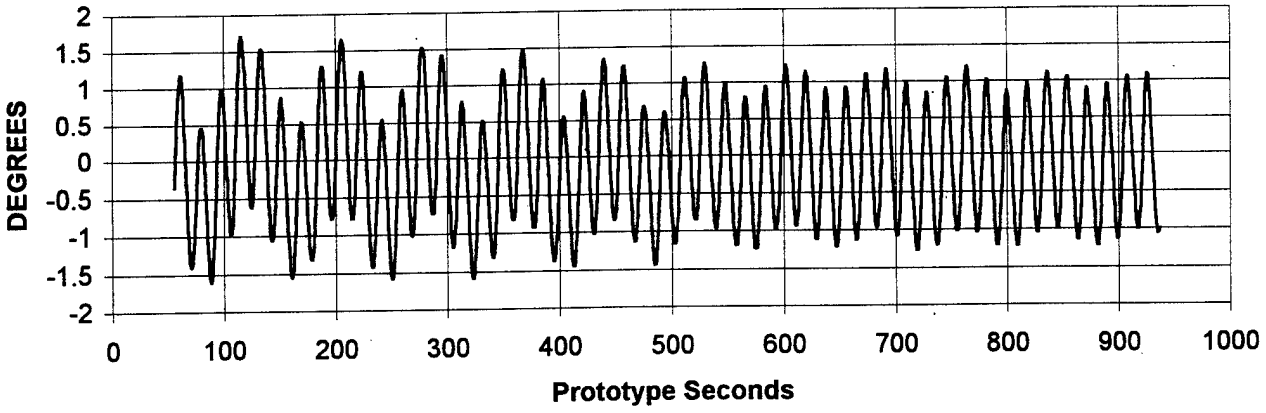
TEST A597 - BUOY 2 TENSION

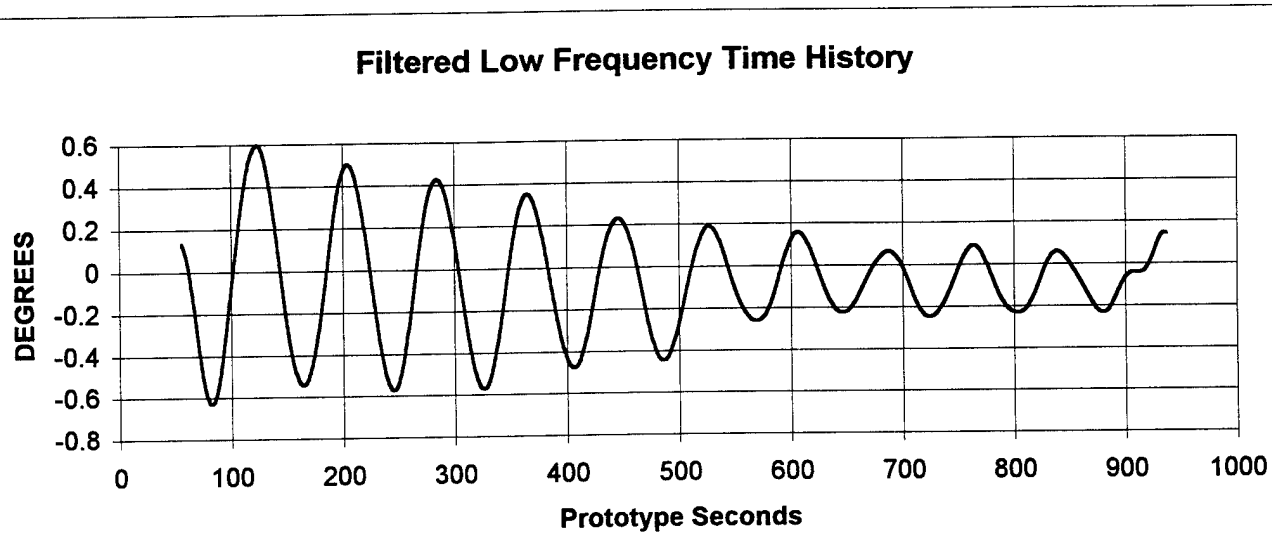


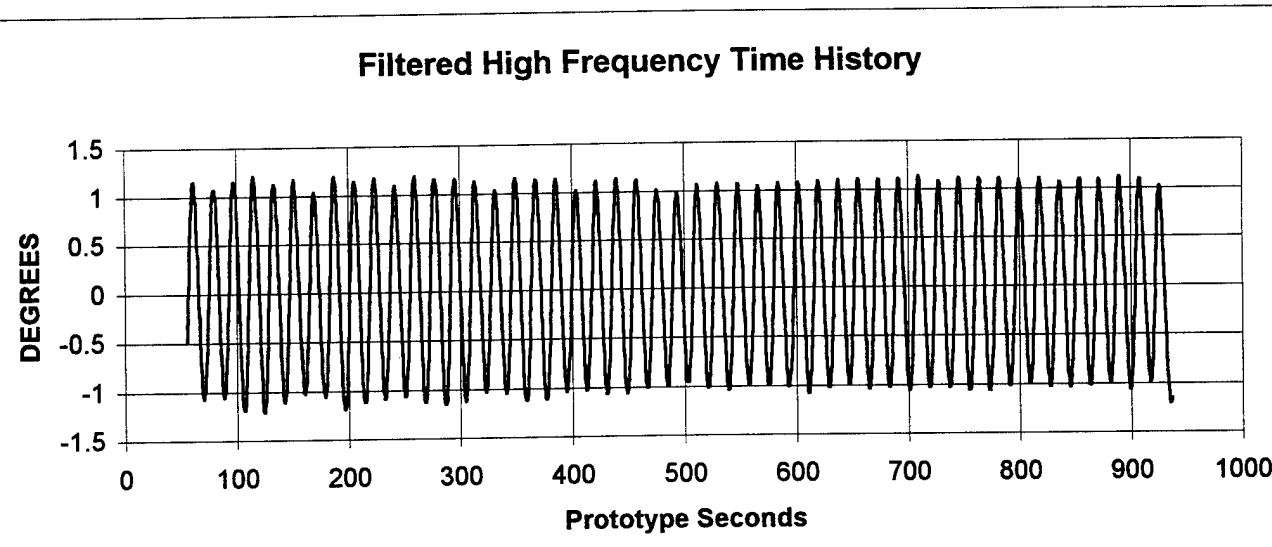



TEST A597 - PITCH

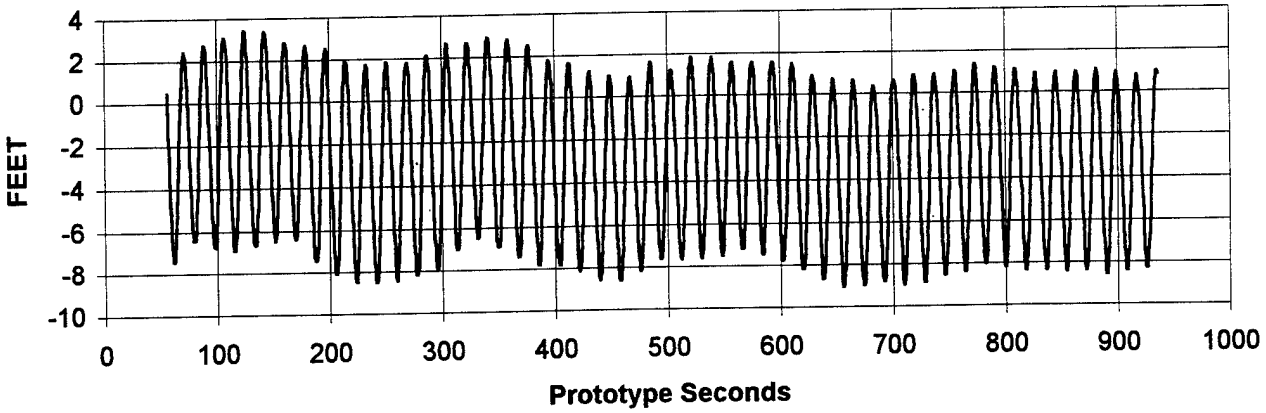


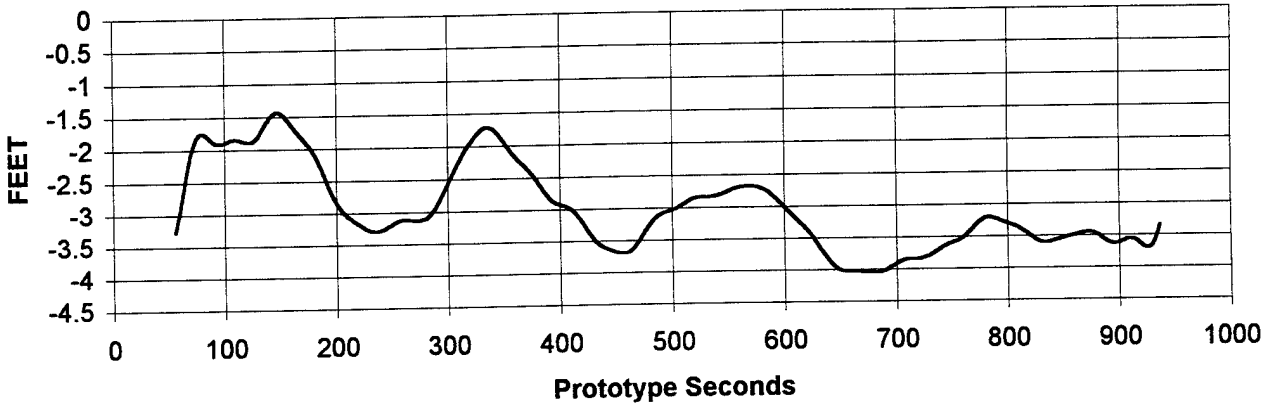



TEST A597 - PT SURGE

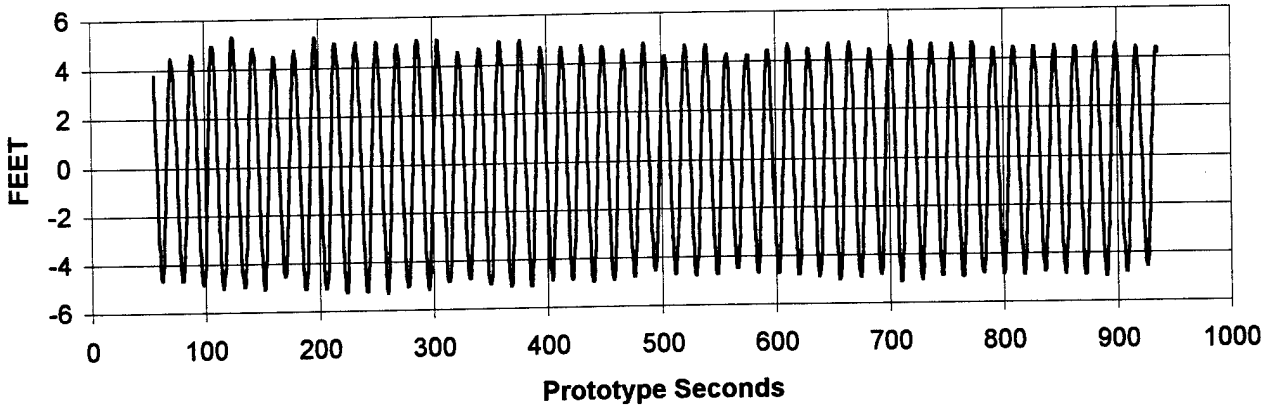
## Unfiltered Time History




## Filtered Low Frequency Time History

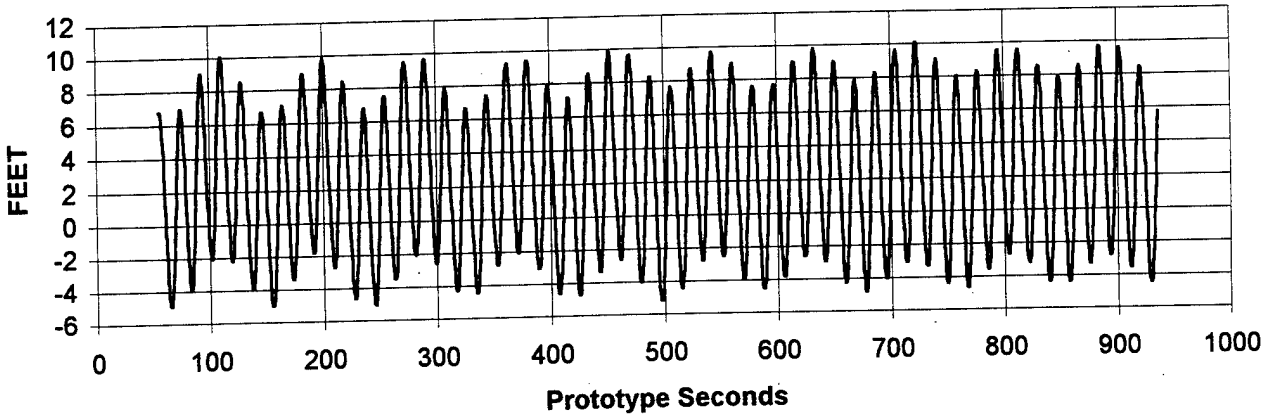



## Filtered High Frequency Time History

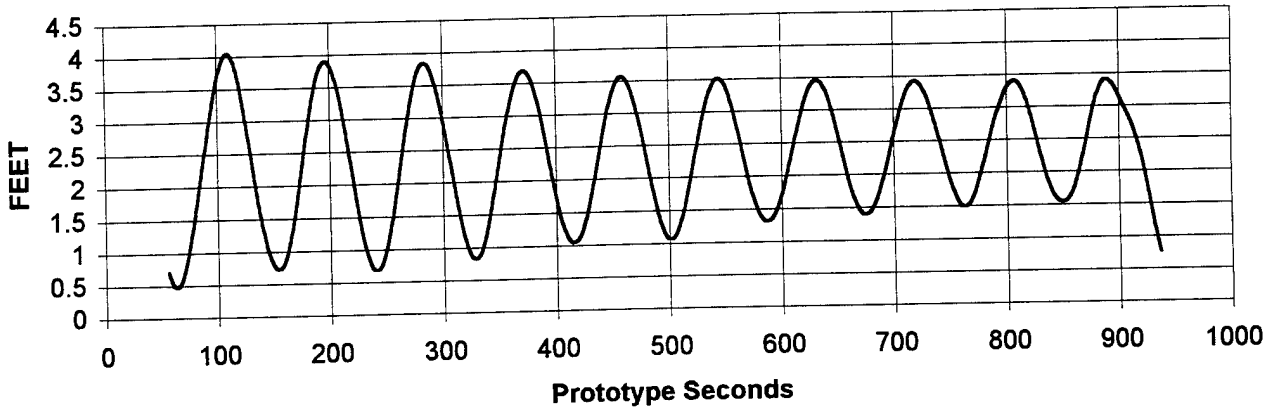


TEST A597 - PT HEAVE

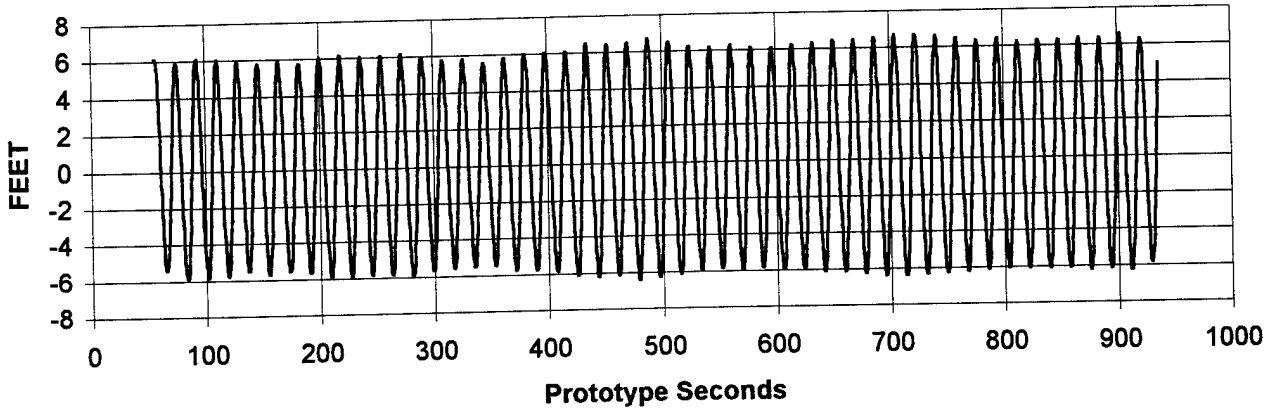
## Unfiltered Time History



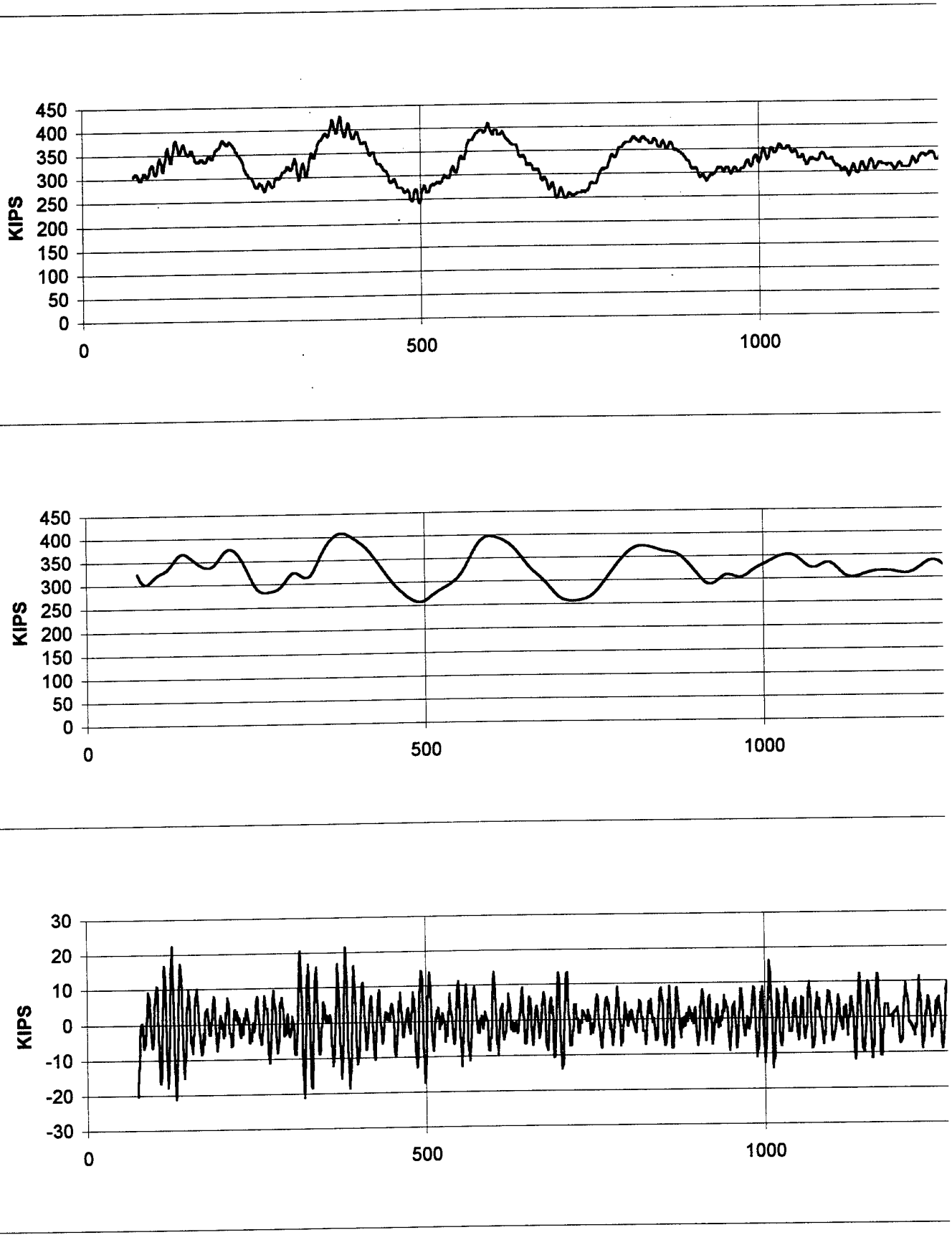

## Filtered Low Frequency Time History



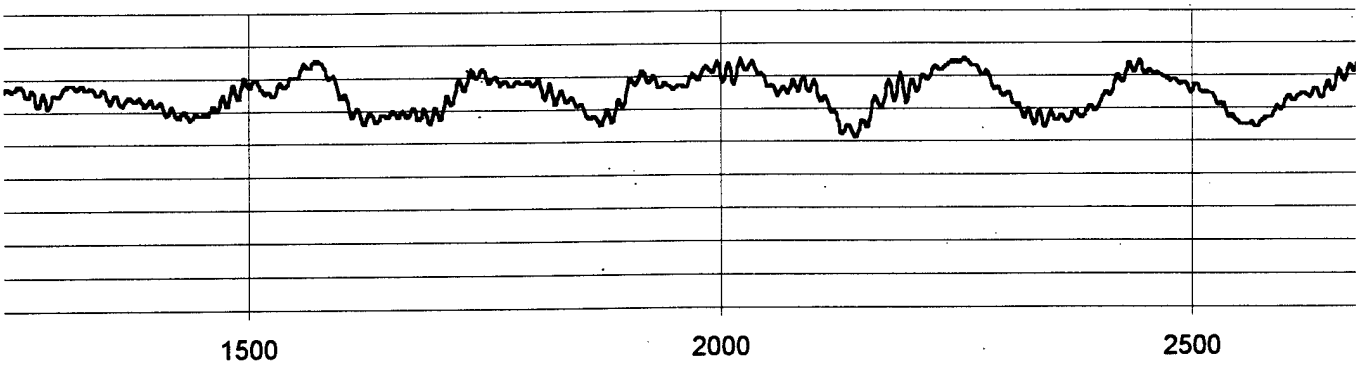

## Filtered High Frequency Time History



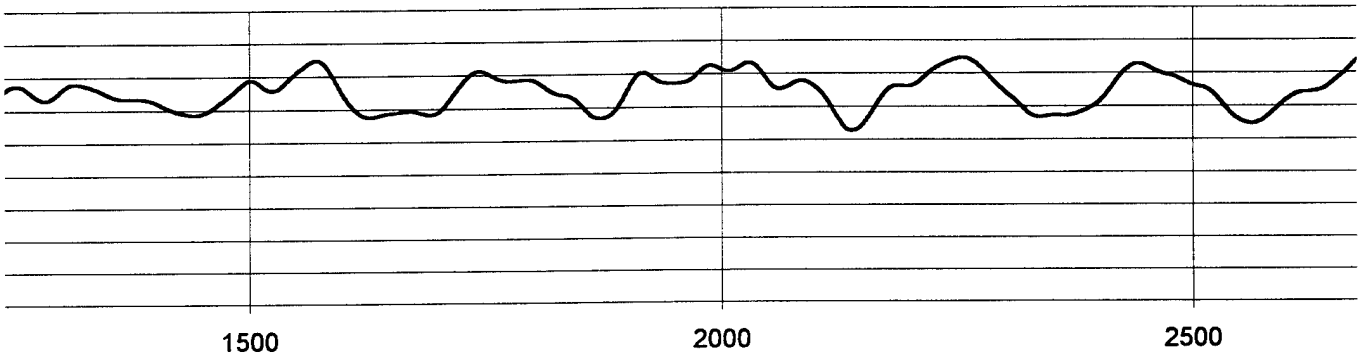
TEST A598 - ML_1



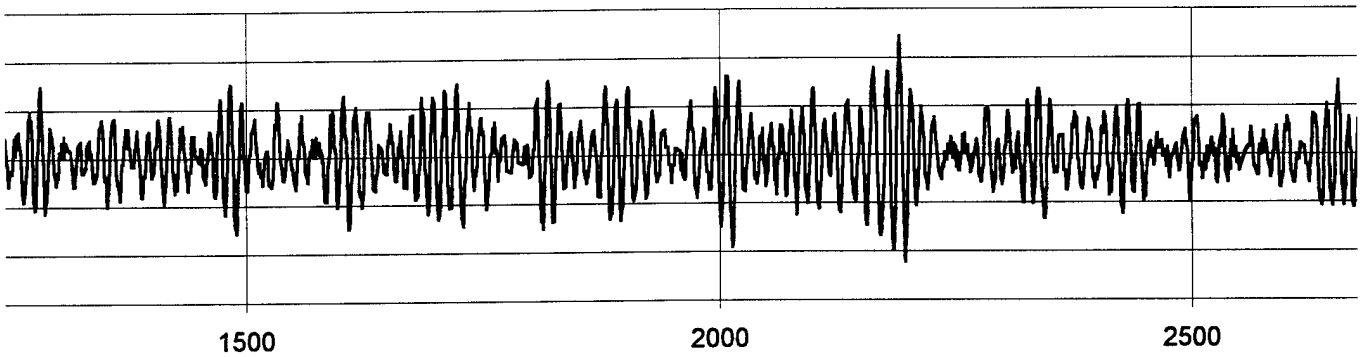
## Unfiltered Time History



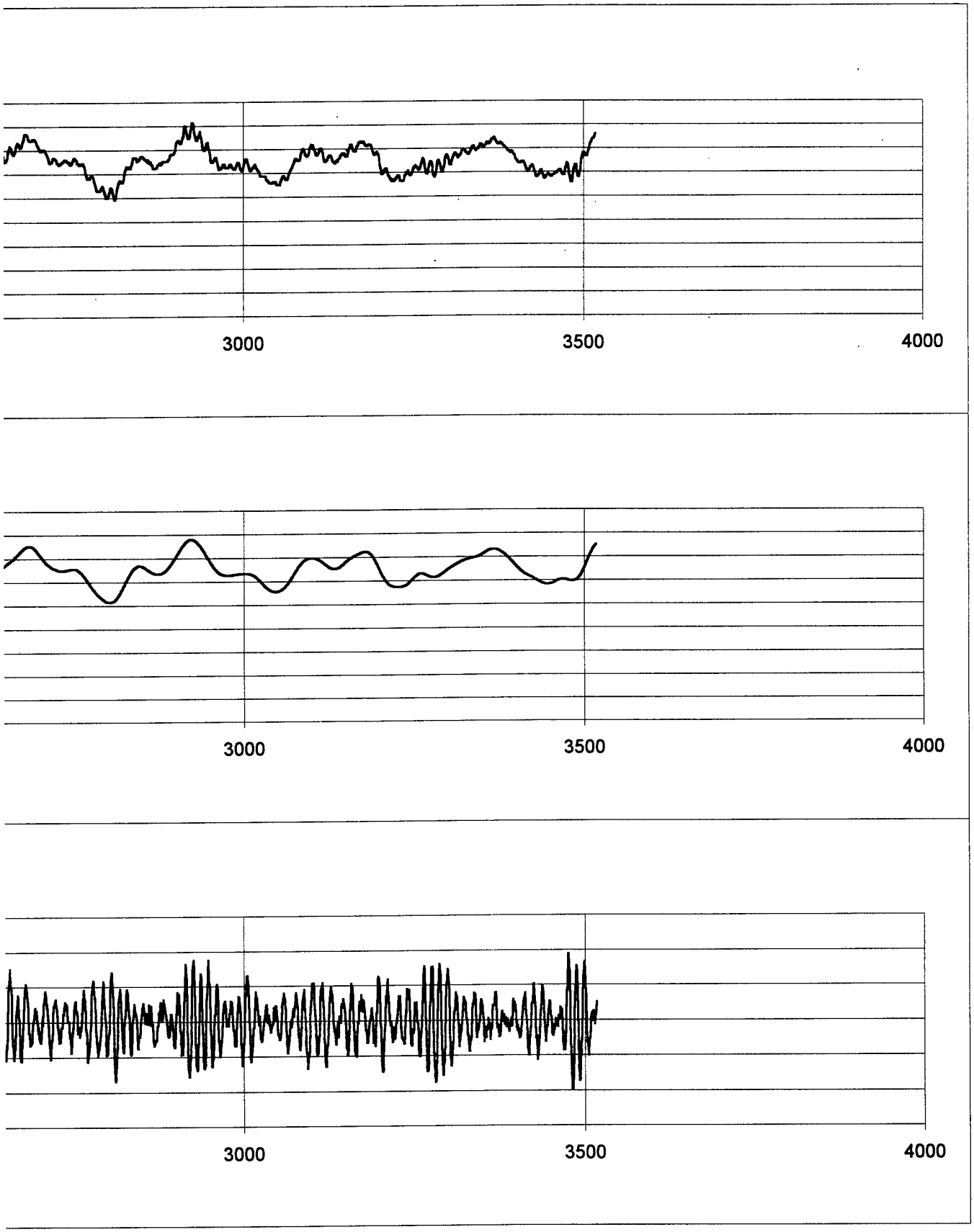

## Filtered Low Frequency Time History



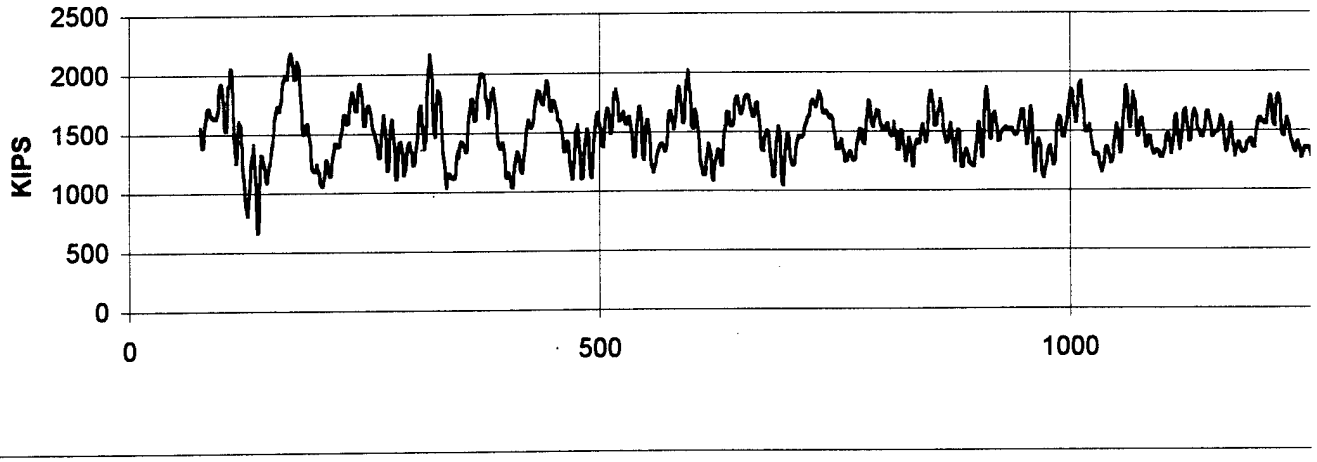

## Filtered High Frequency Time History

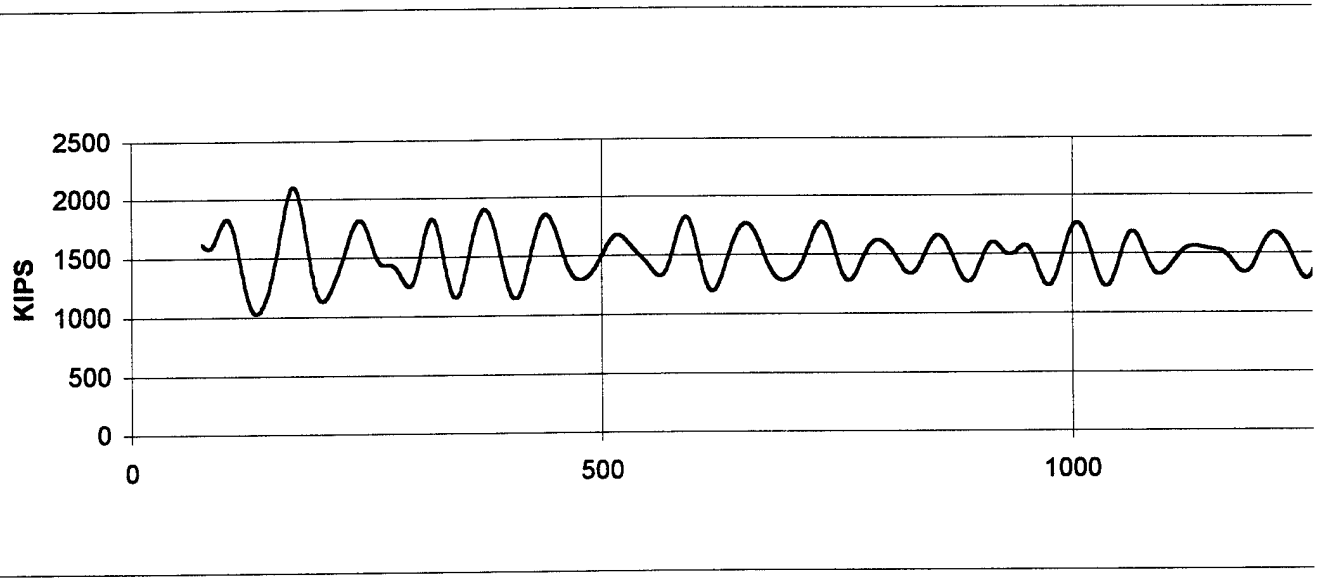


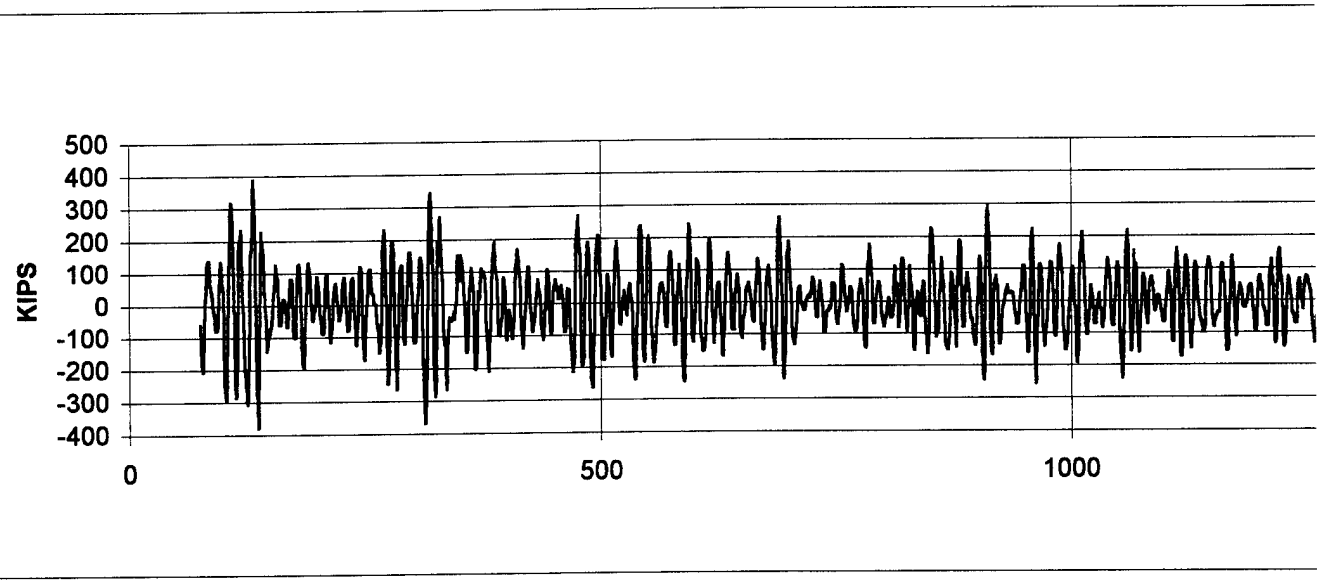
TEST A598 - ML_1



TEST A598 - BUOY 1 TENSION

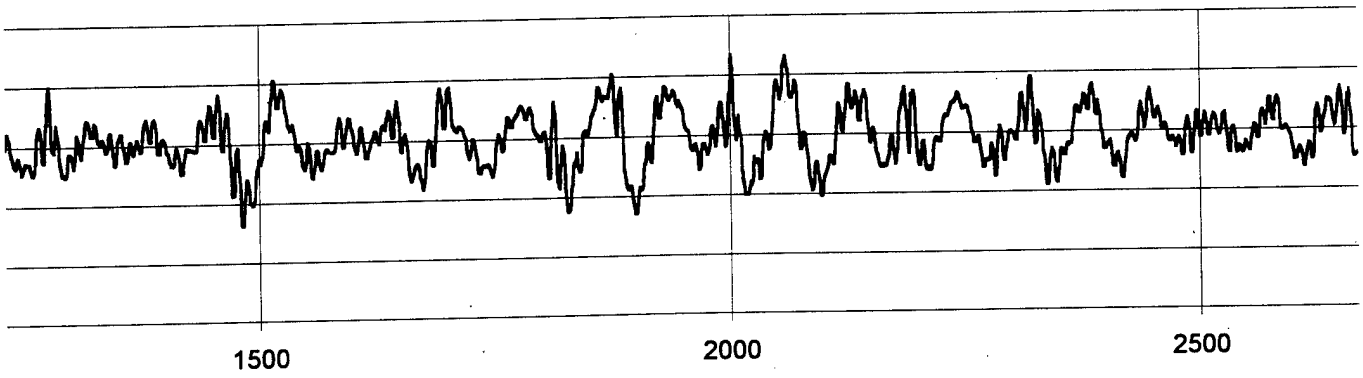


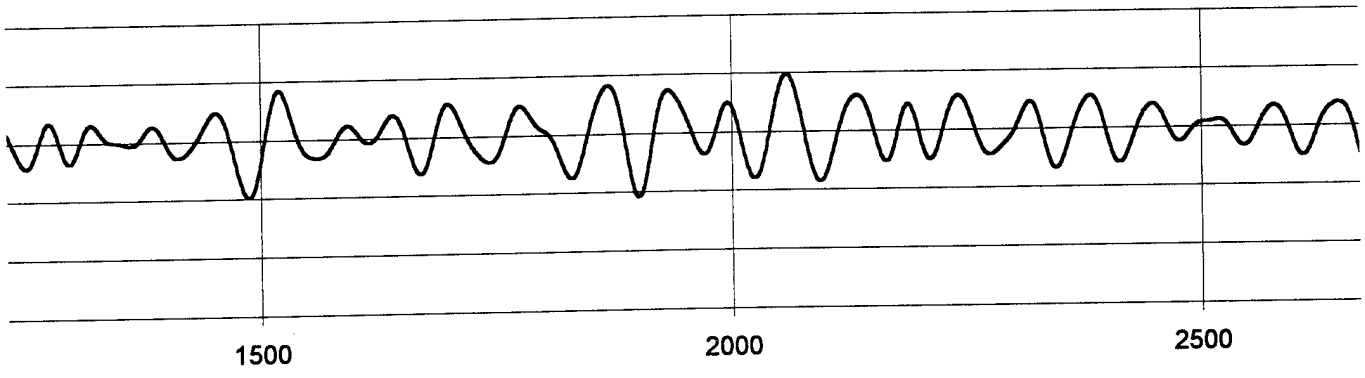



TEST A598 - BUOY 1 TENSION

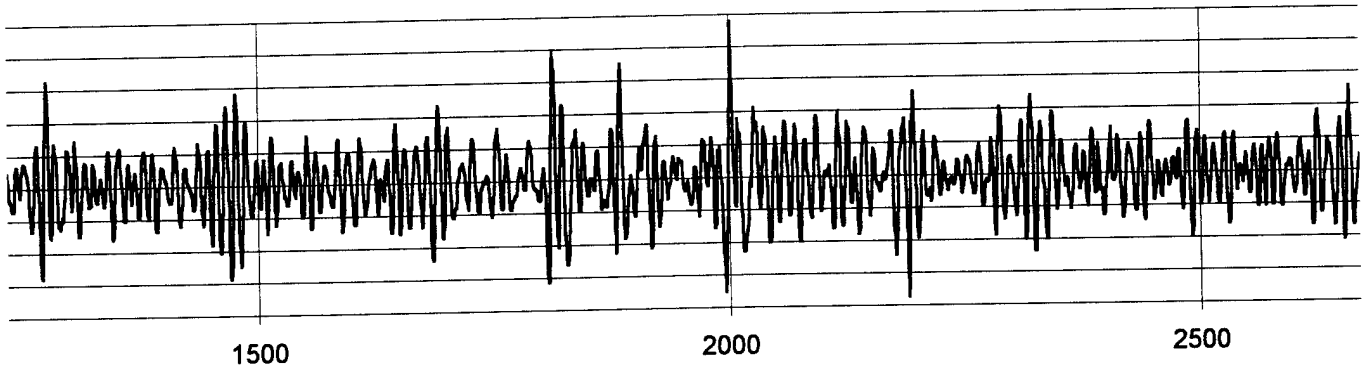
## Unfiltered Time History



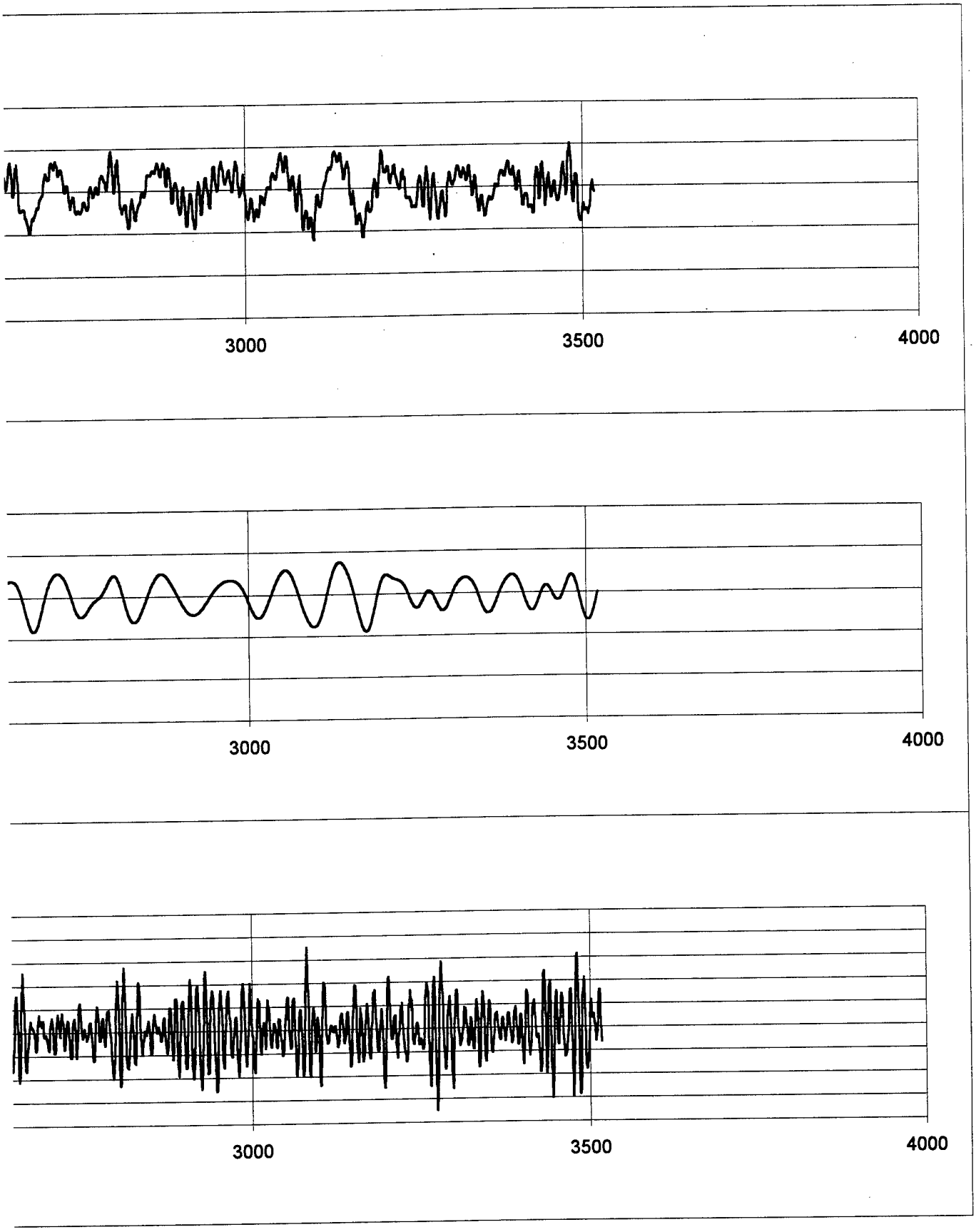

## Filtered Low Frequency Time History



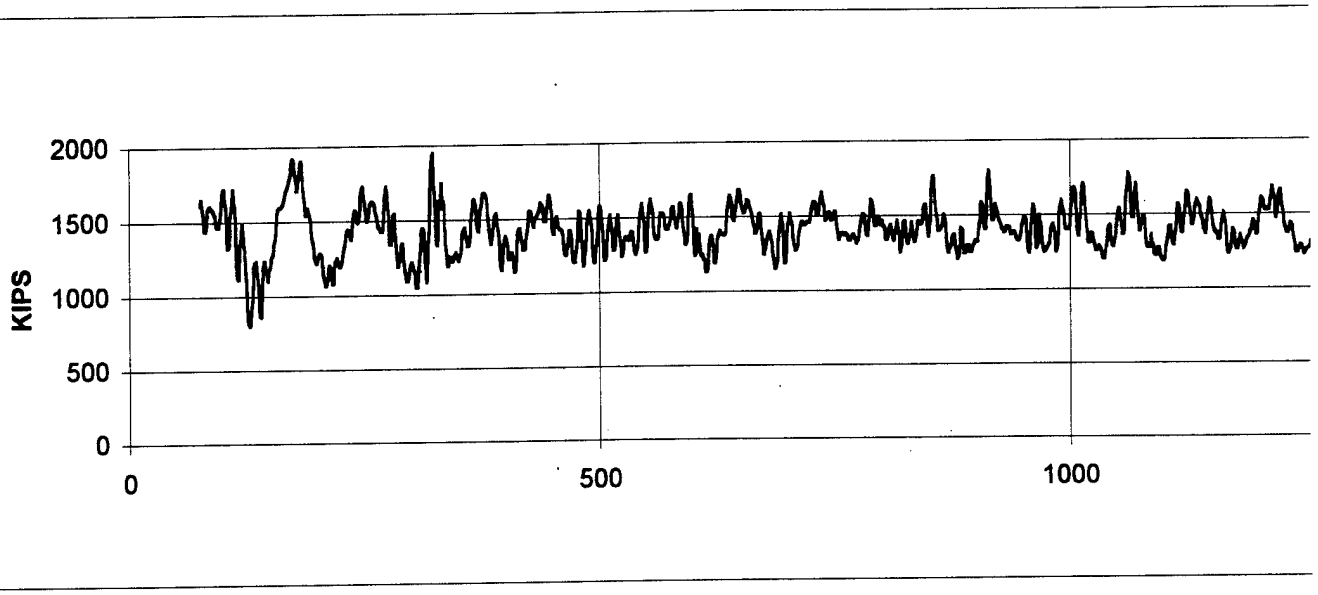

## Filtered High Frequency Time History

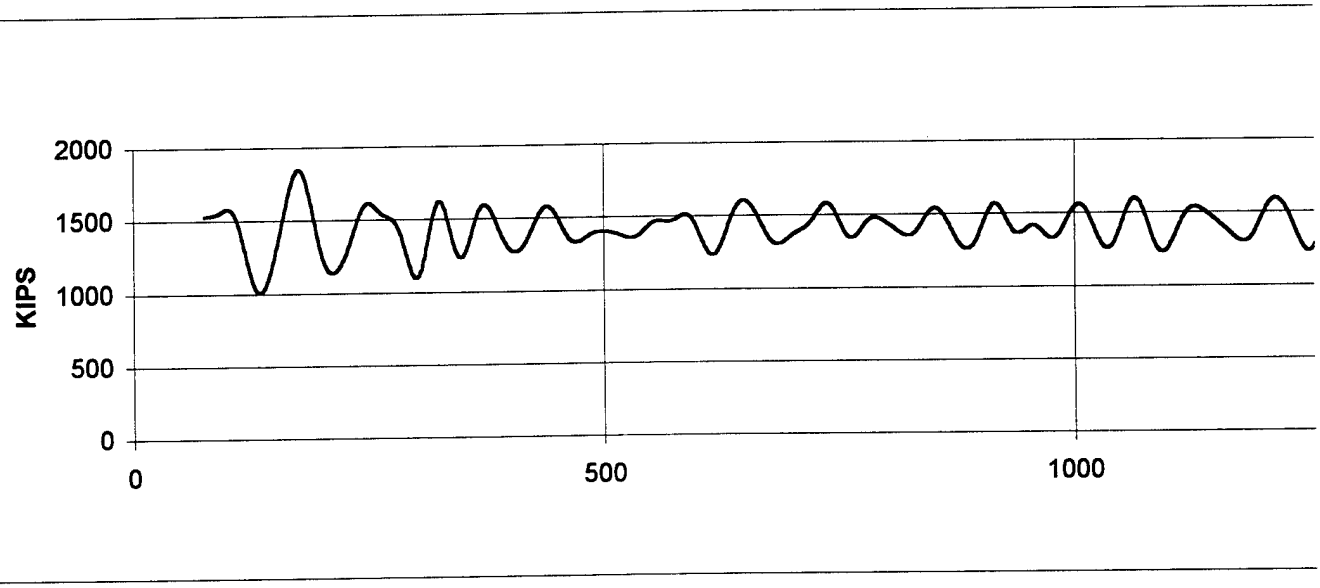


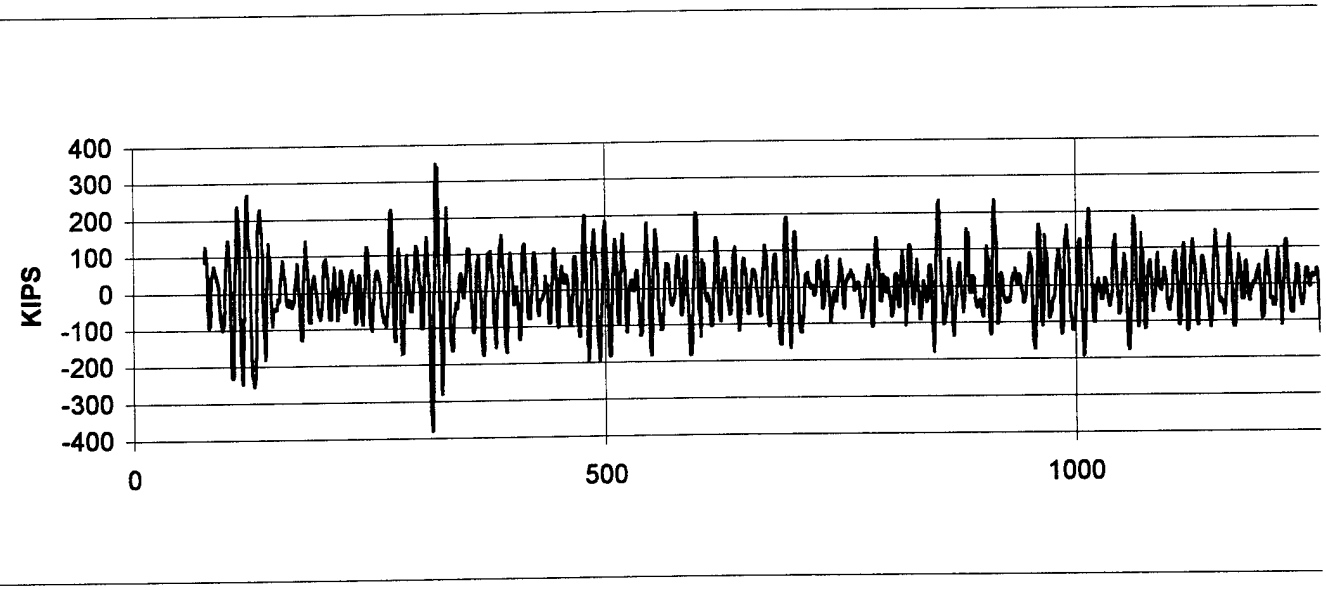
TEST A598 - BUOY 1 TENSION



TEST A598 - BUOY 2 TENSION

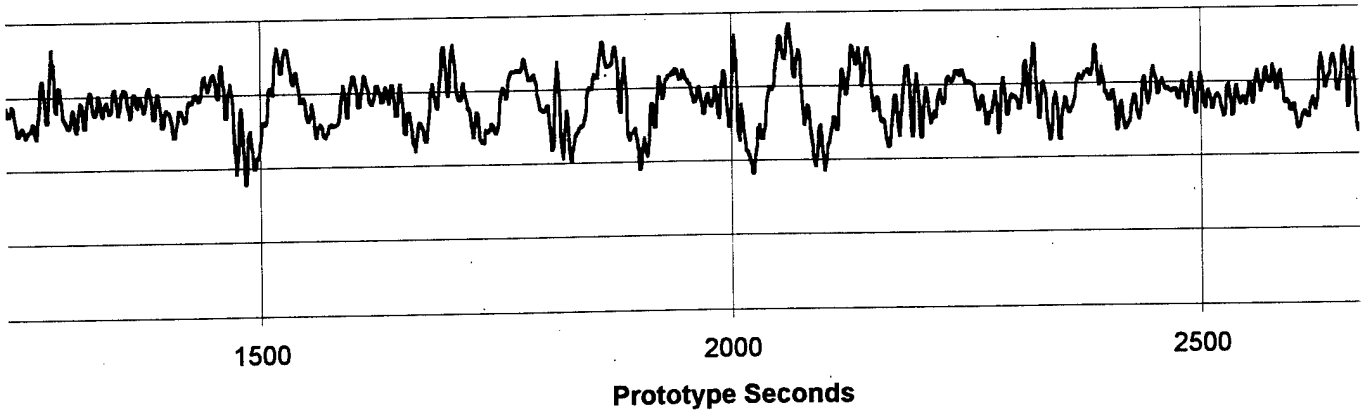


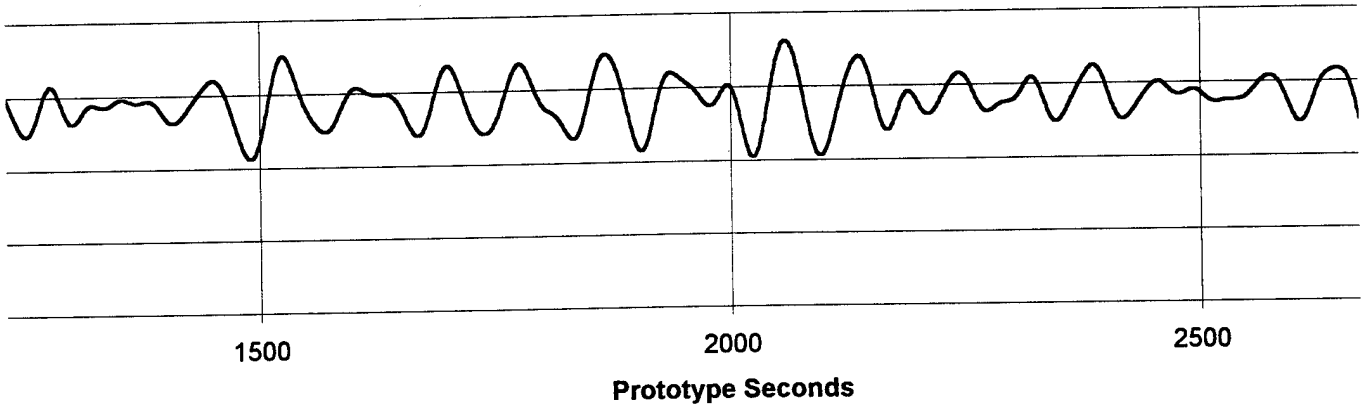



TEST A598 - BUOY 2 TENSION

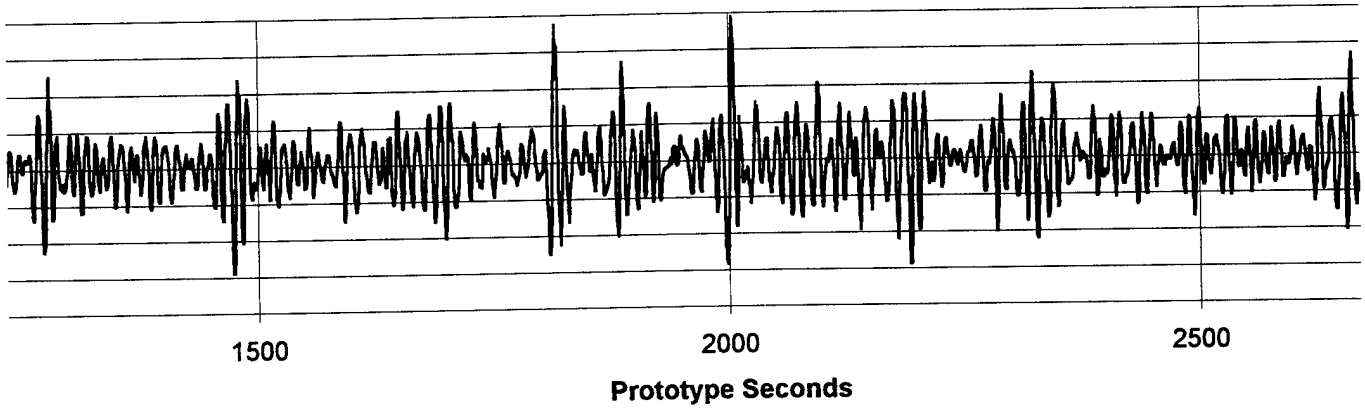
## Unfiltered Time History



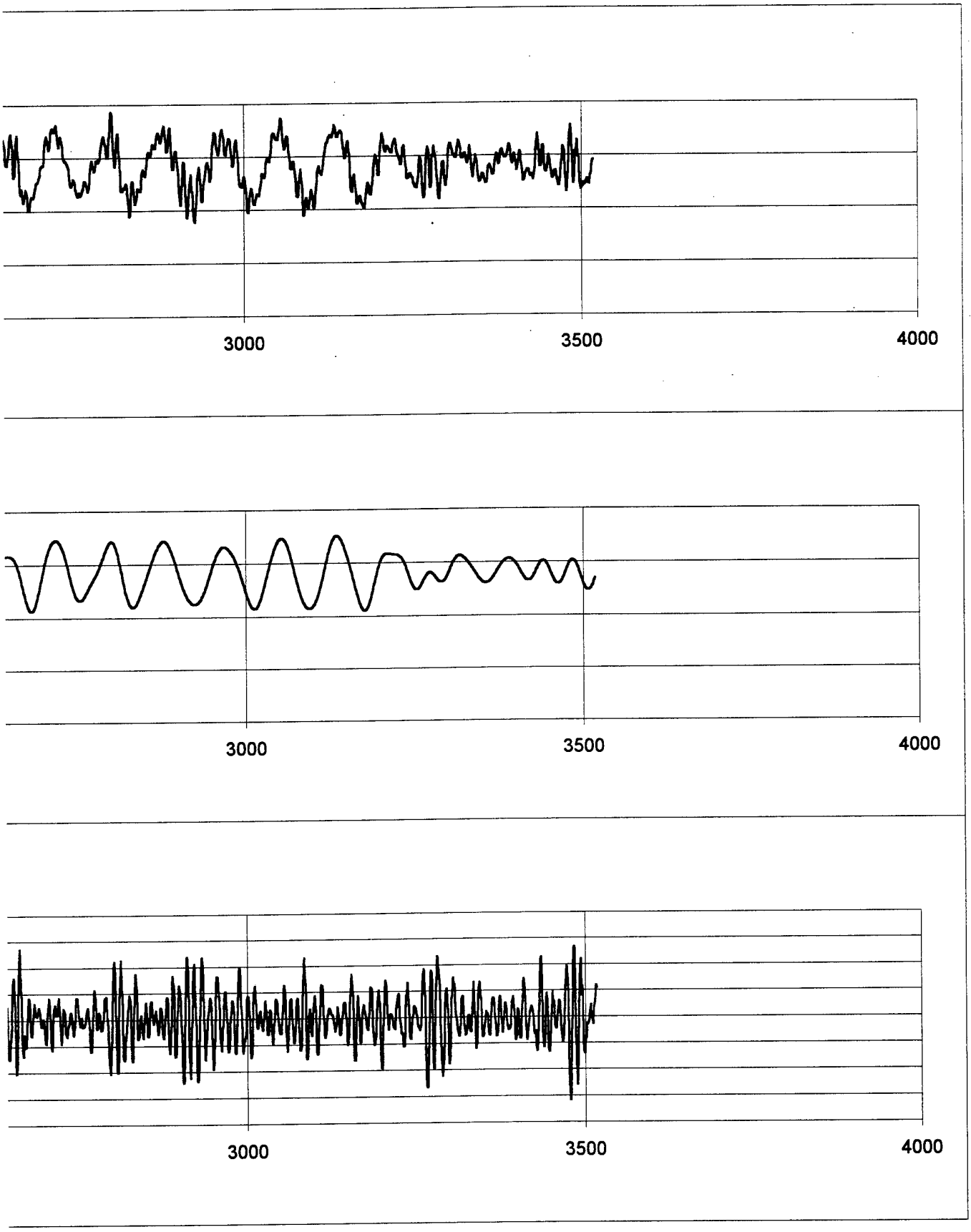

## Filtered Low Frequency Time History



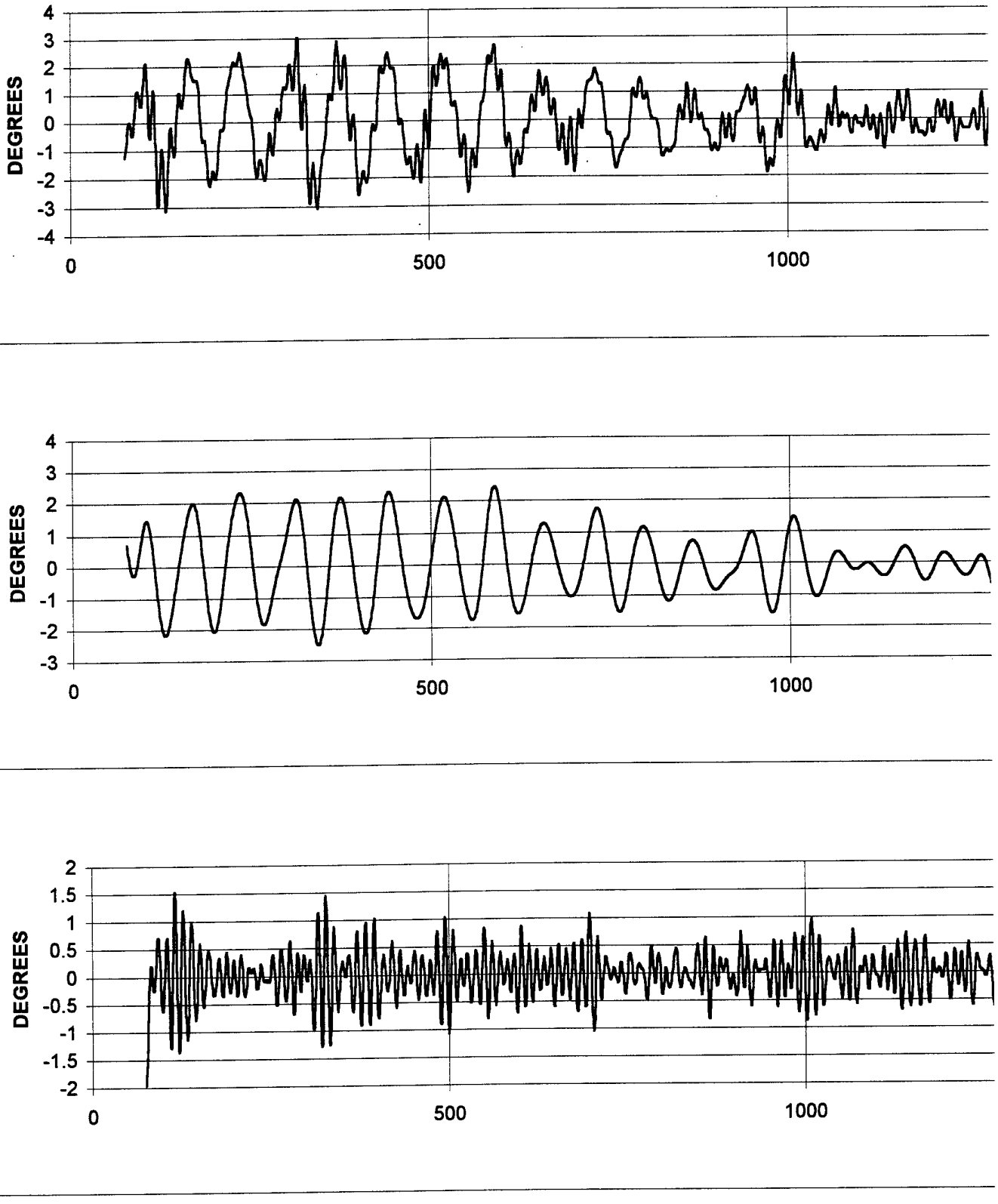

## Filtered High Frequency Time History



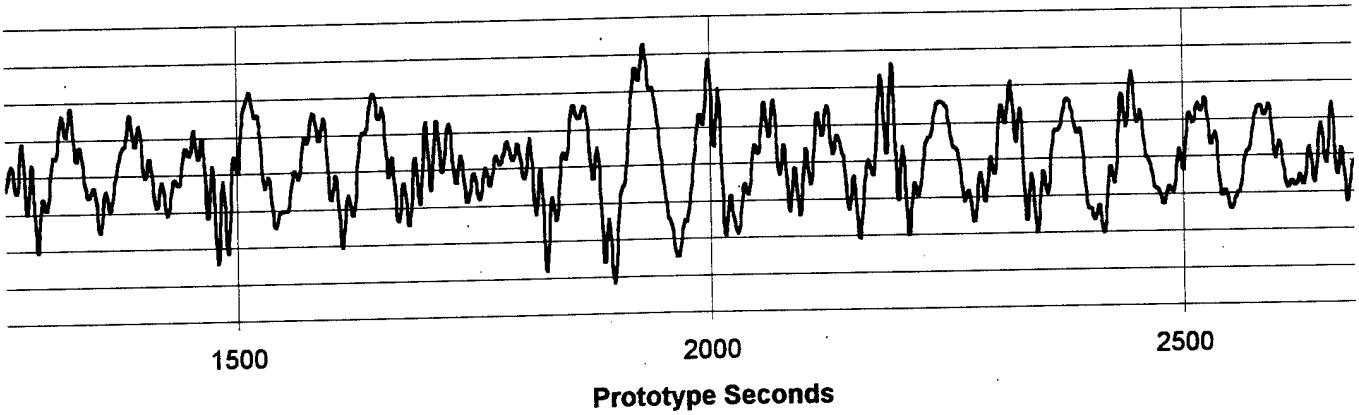
TEST A598 - BUOY 2 TENSION



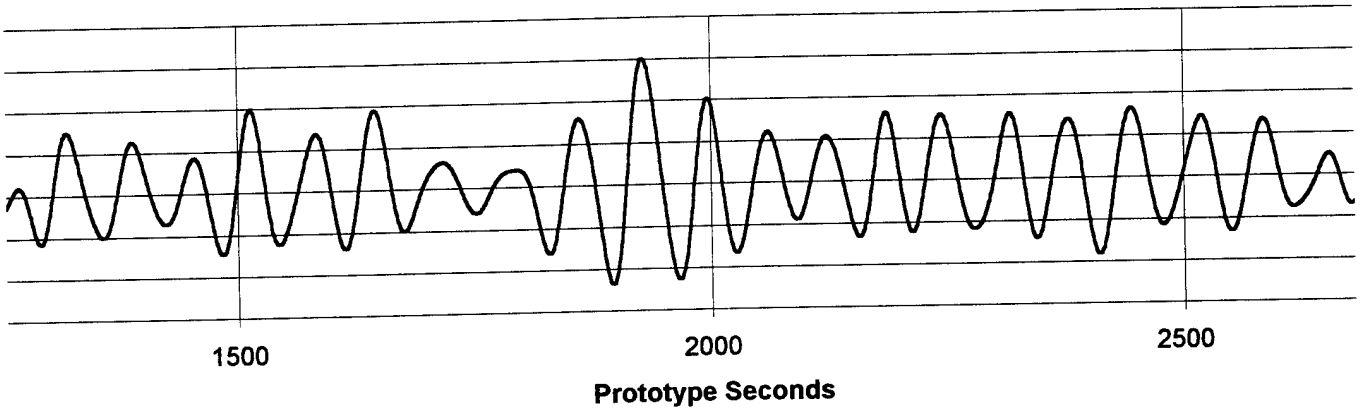
TEST A598 - PITCH



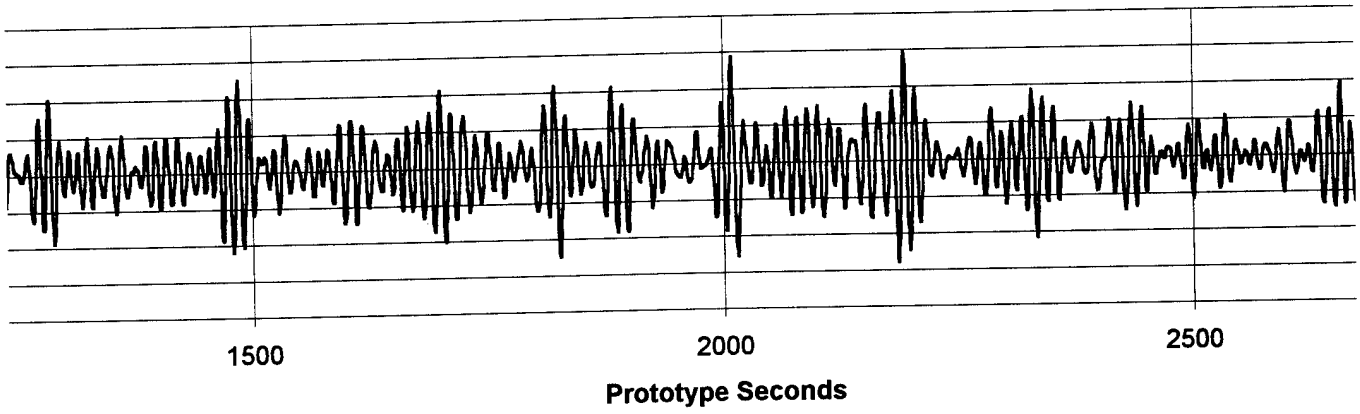
## Unfiltered Time History



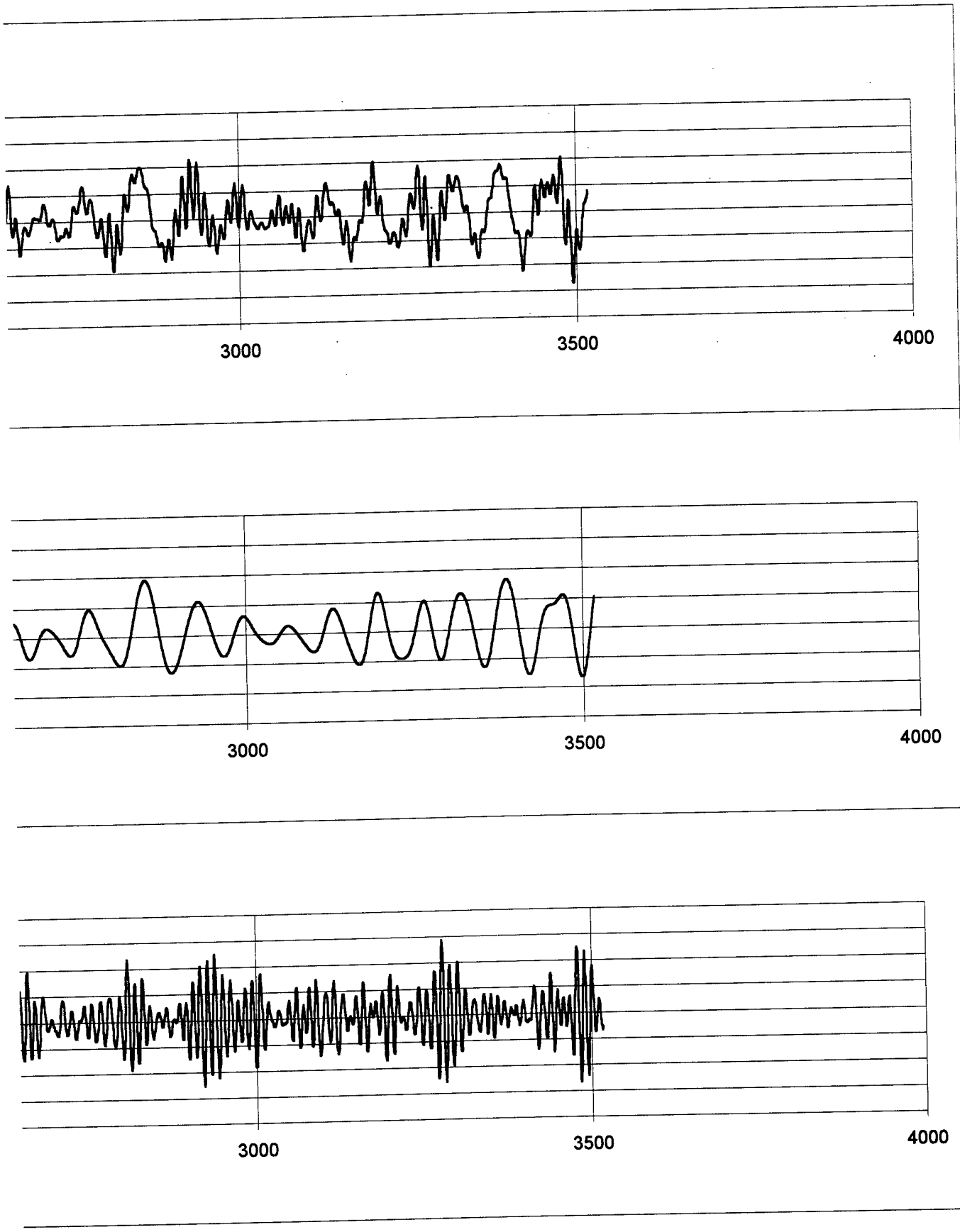

## Filtered Low Frequency Time History



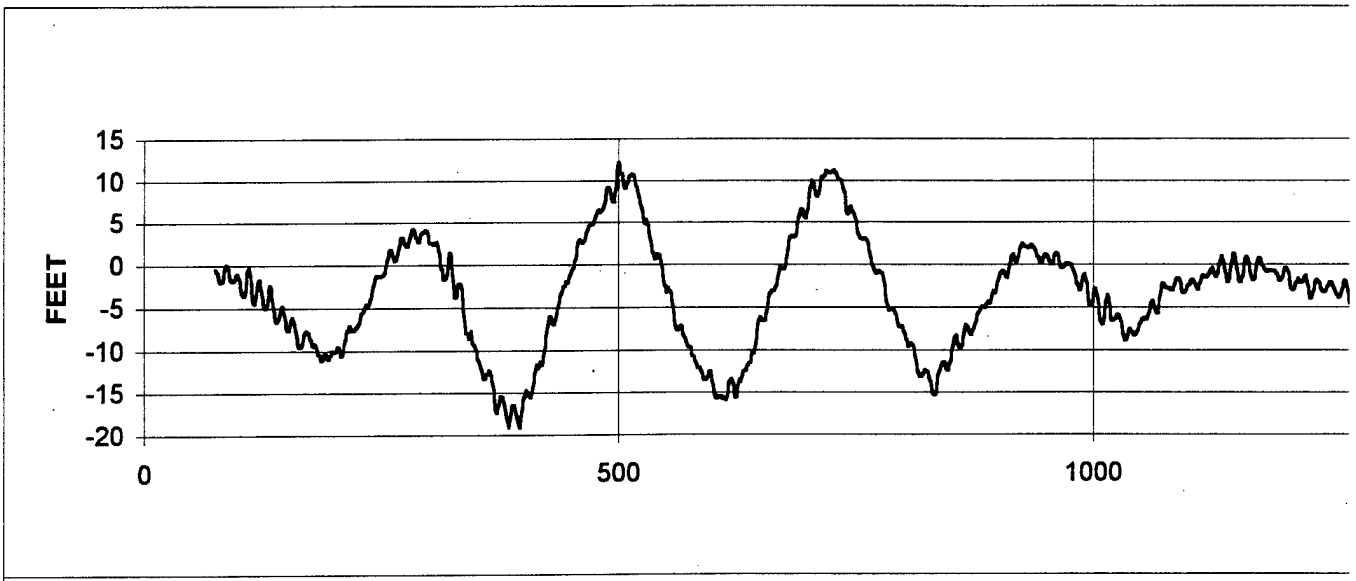

## Filtered High Frequency Time History

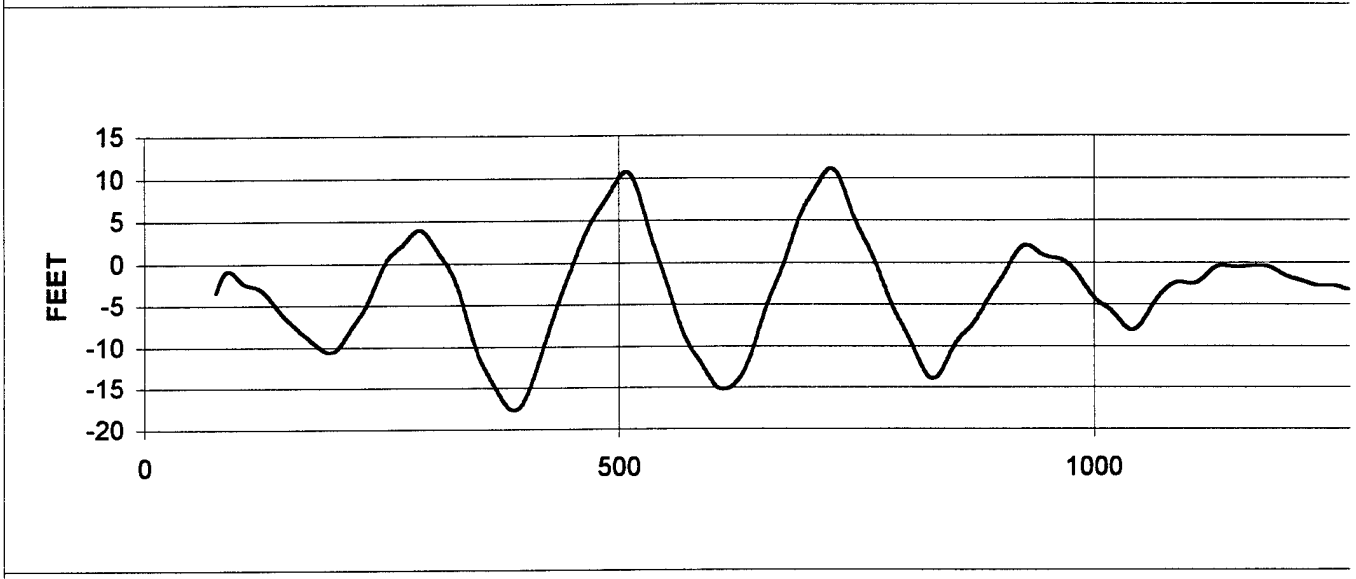


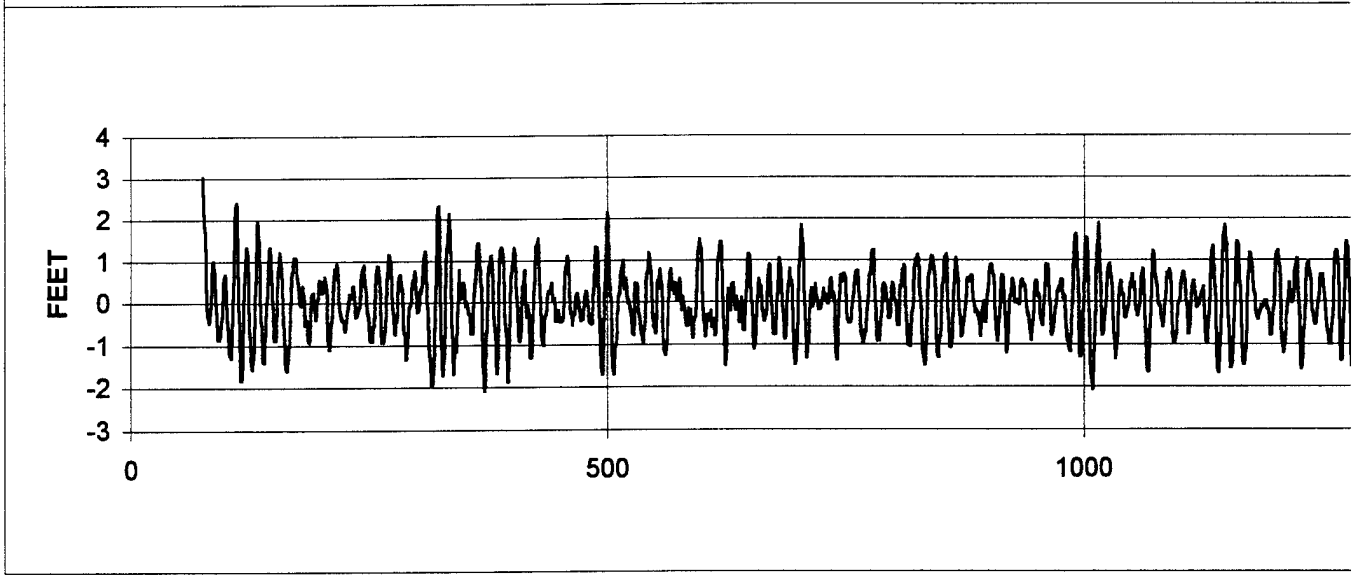
TEST A598 - PITCH



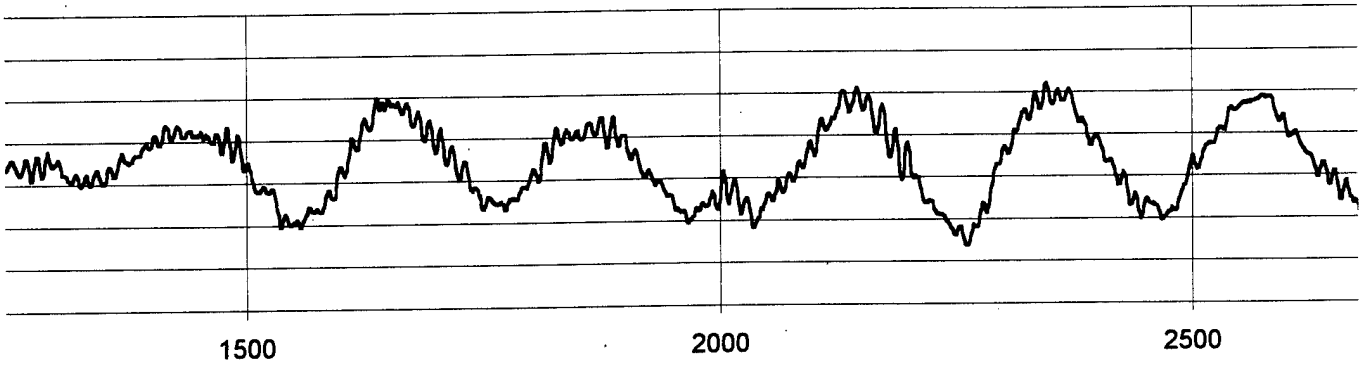
TEST A598 - PT SURGE



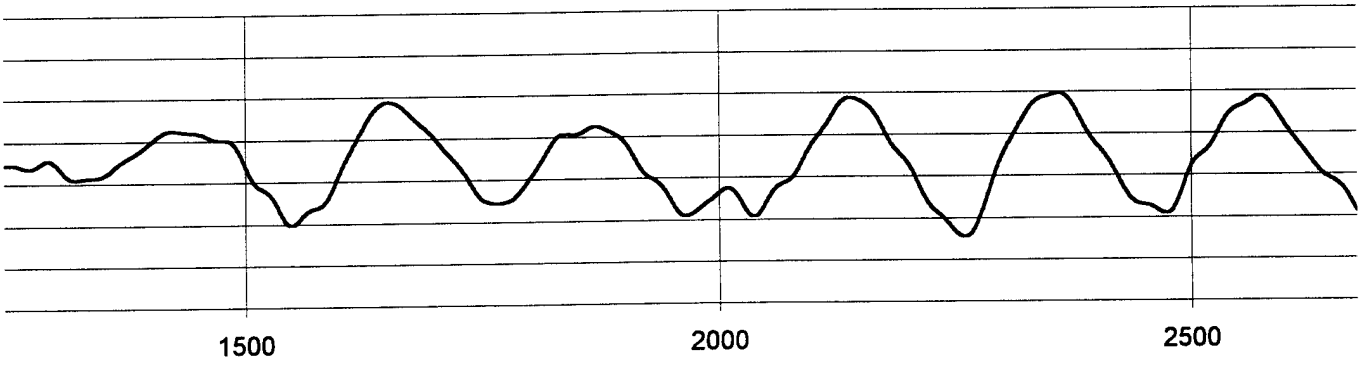



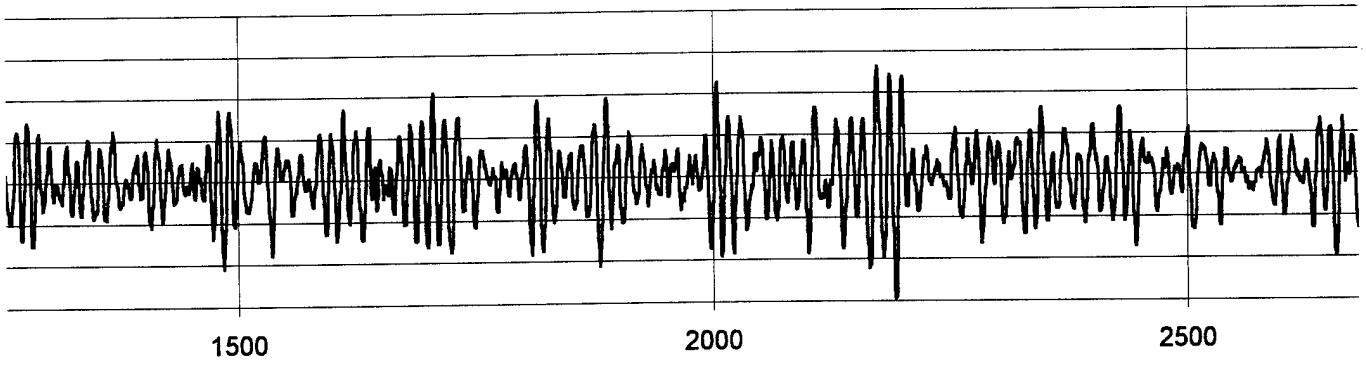
## Unfiltered Time History



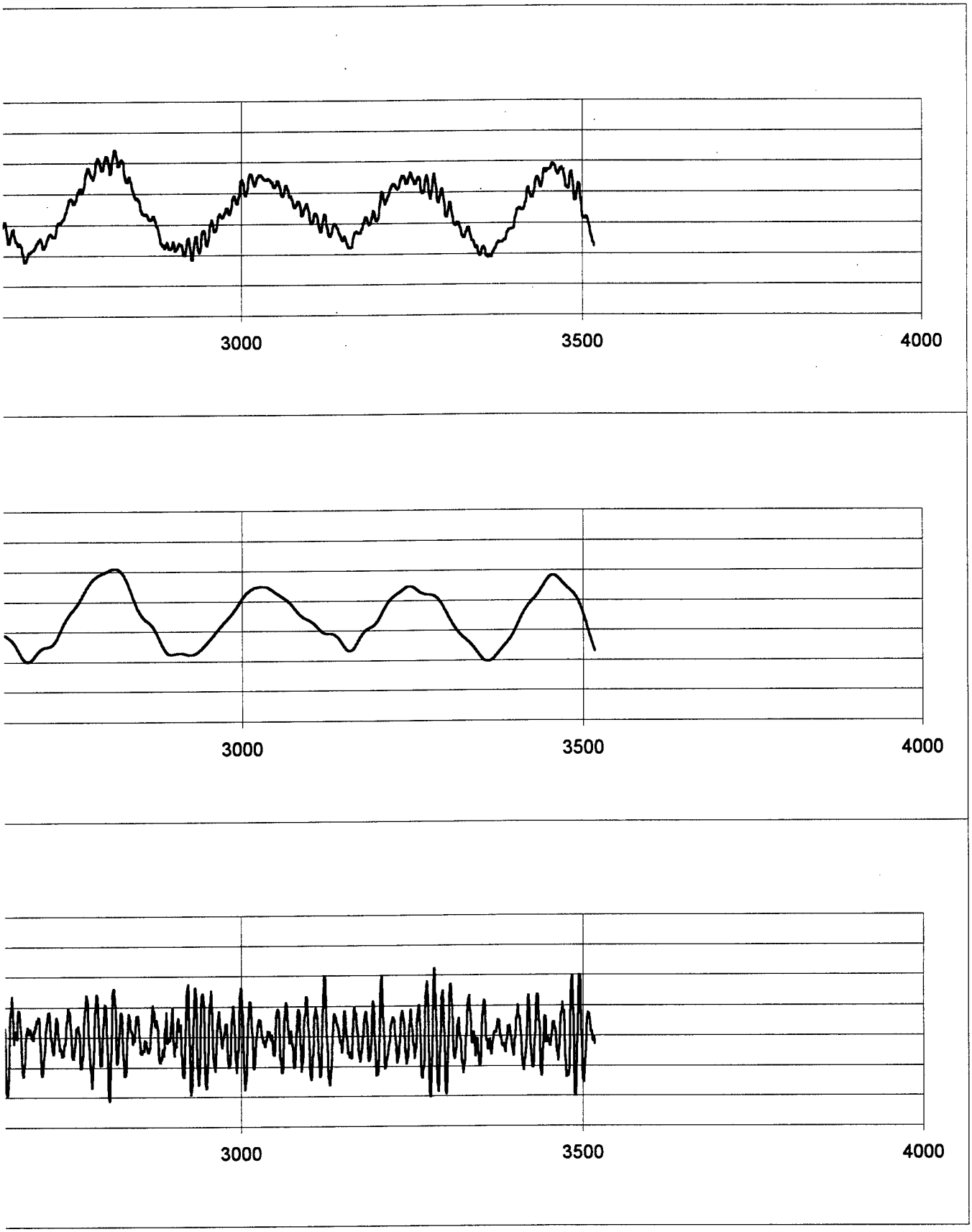

## Filtered Low Frequency Time History



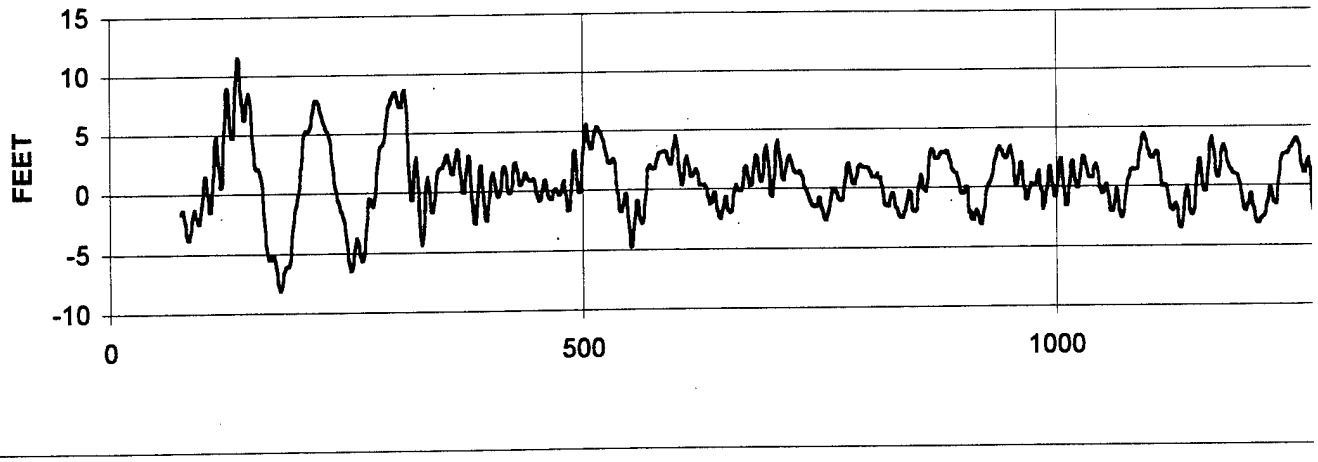

## Filtered High Frequency Time History

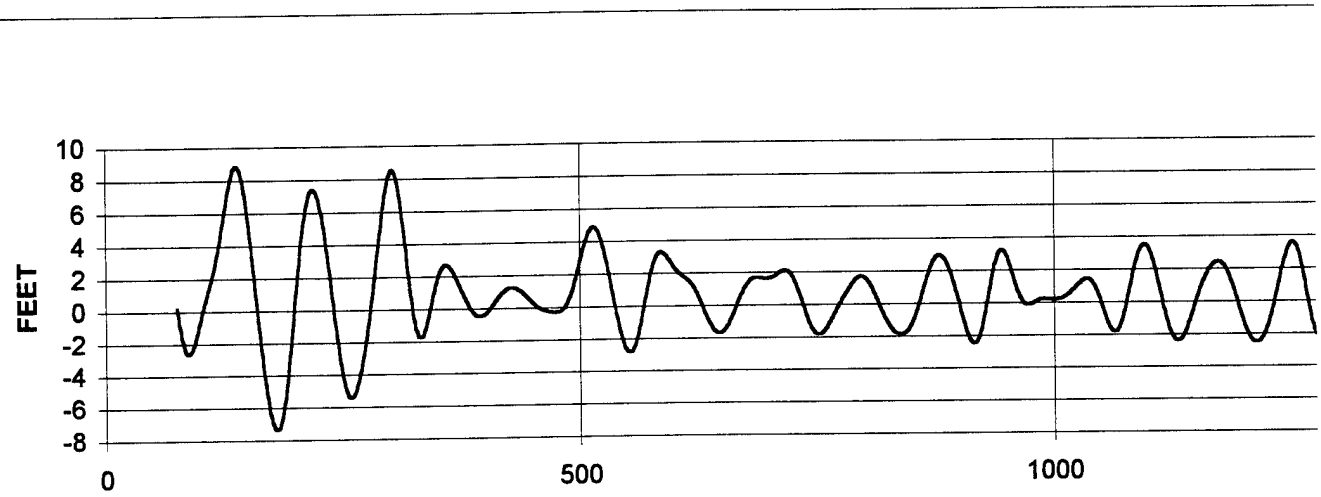


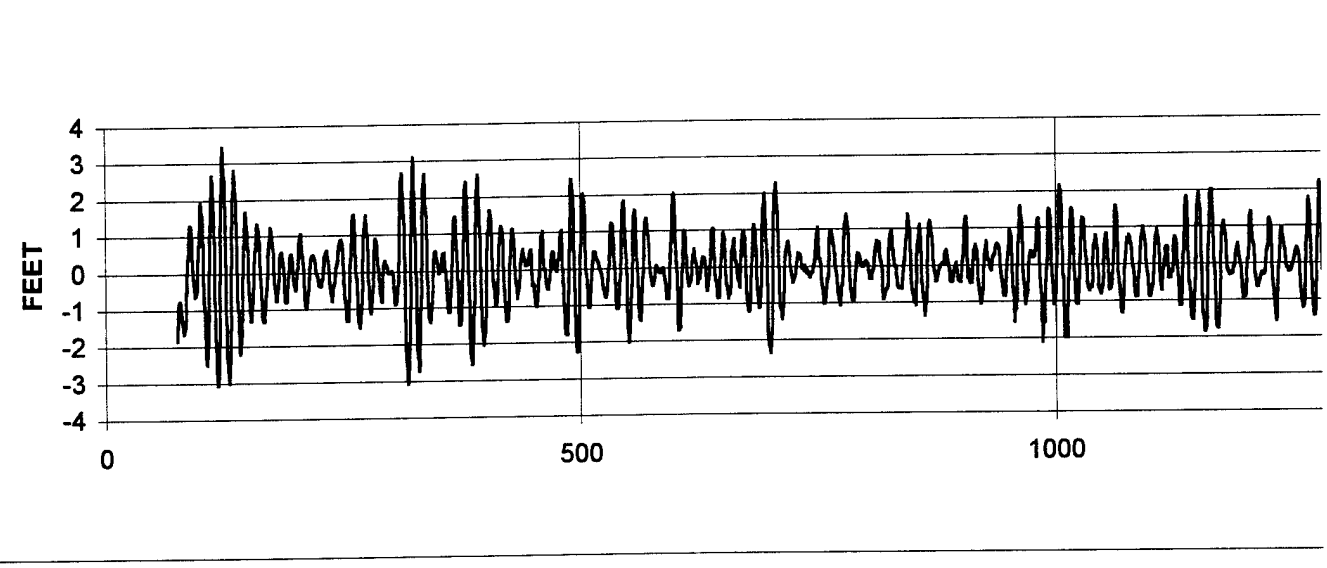
TEST A598 - PT SURGE



TEST A598 - PT HEAVE

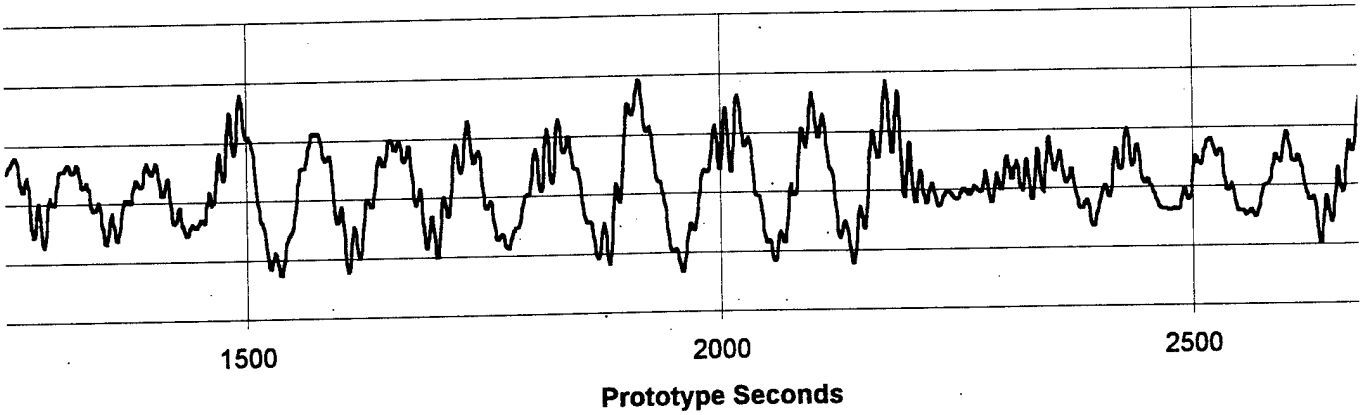


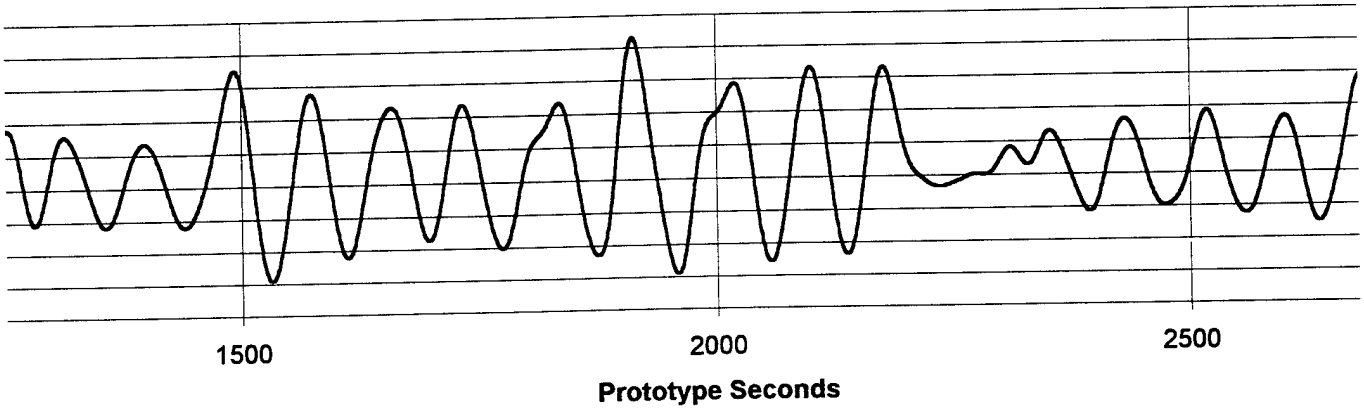



TEST A598 - PT HEAVE

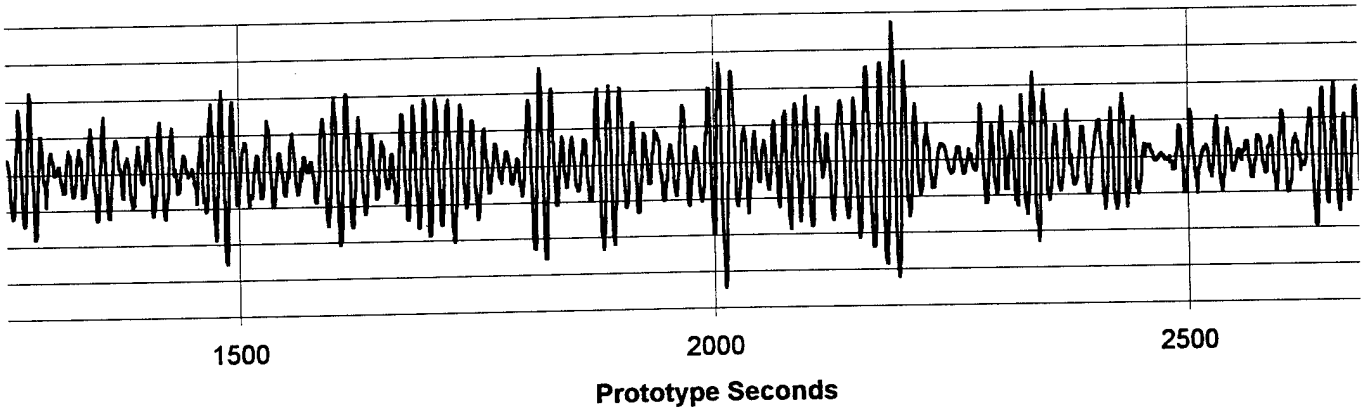
## Unfiltered Time History



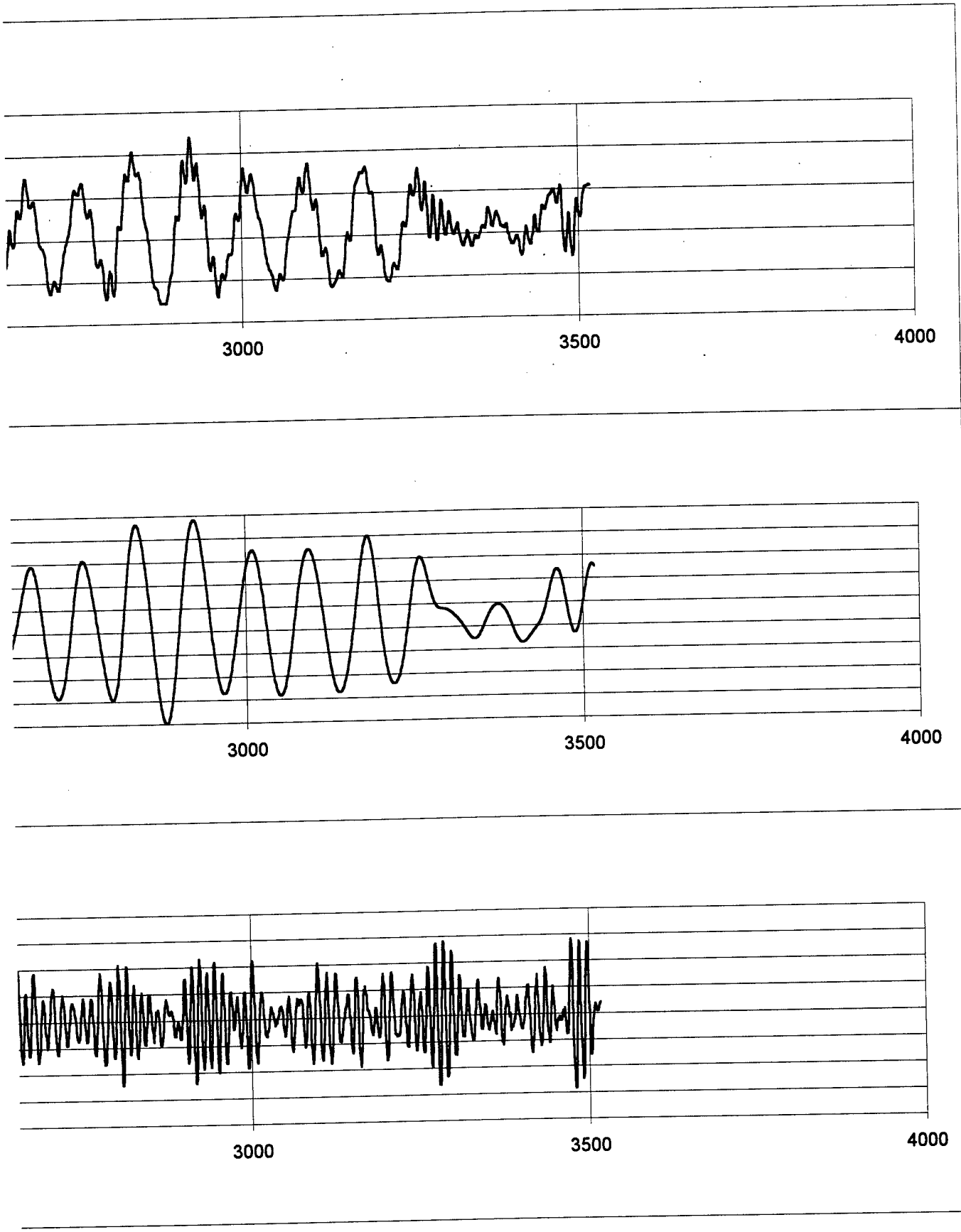

## Filtered Low Frequency Time History



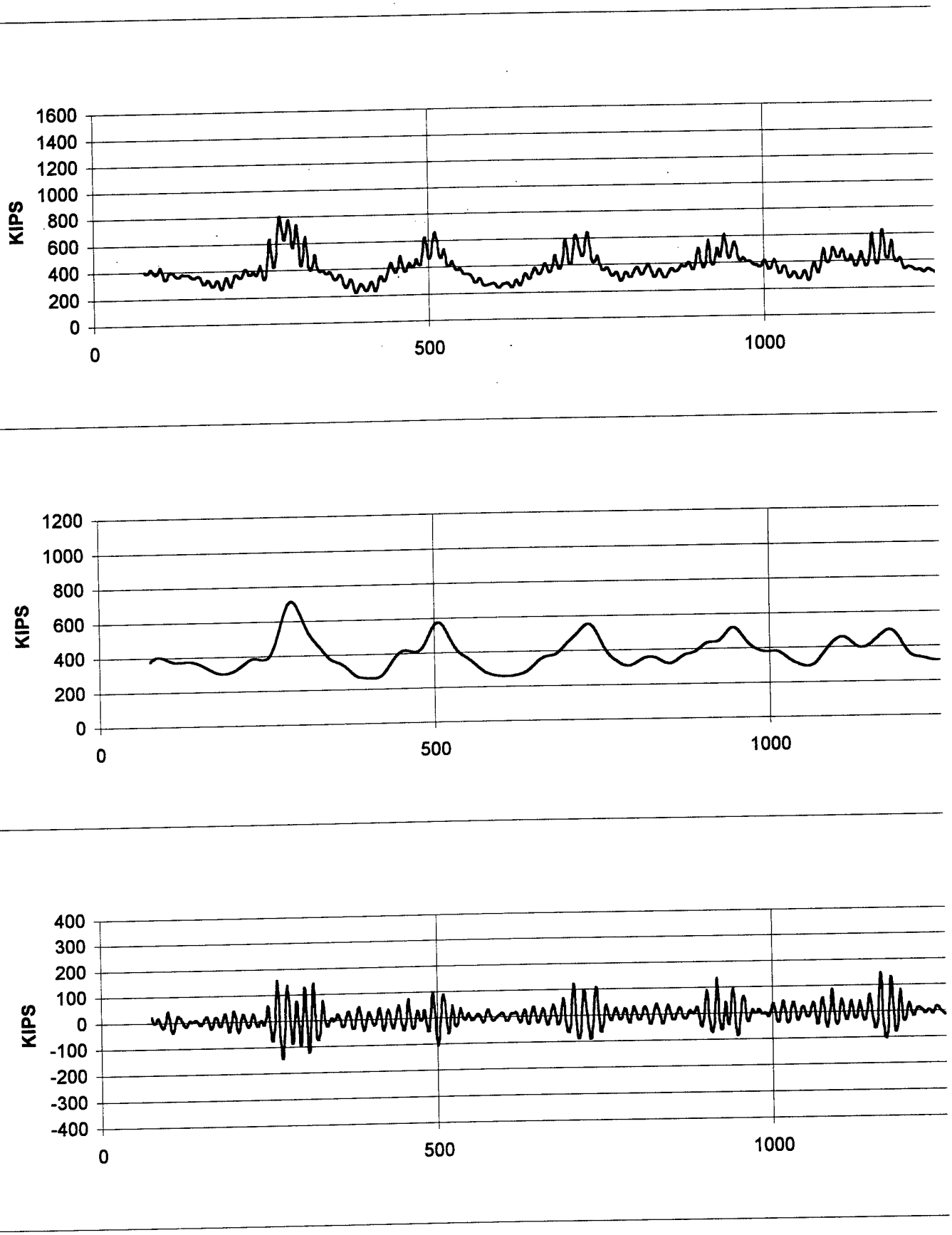

## Filtered High Frequency Time History



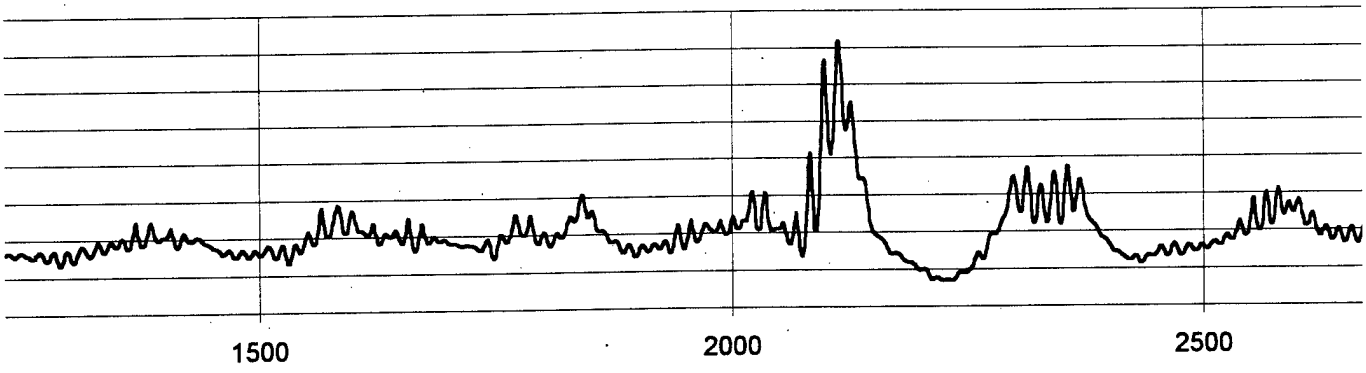
TEST A598 - PT HEAVE



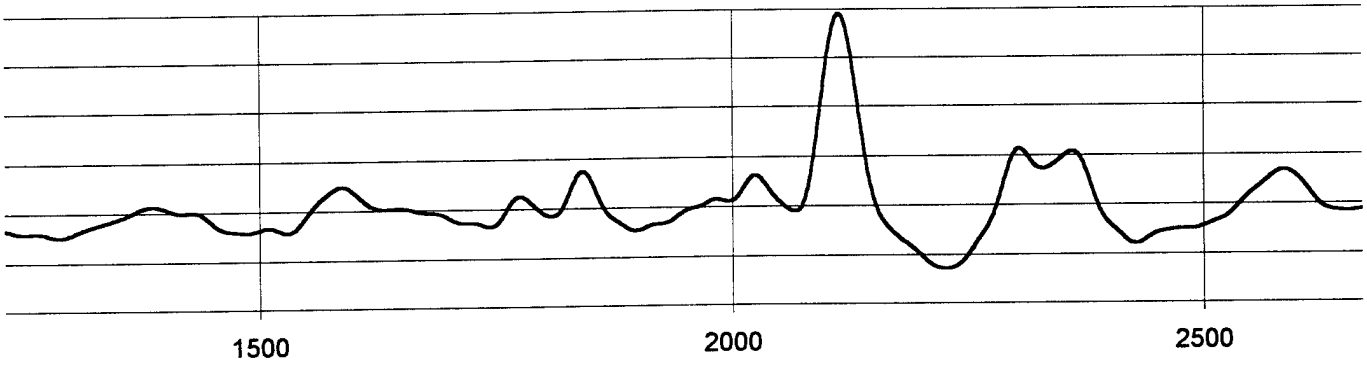
TEST A599 - ML_1



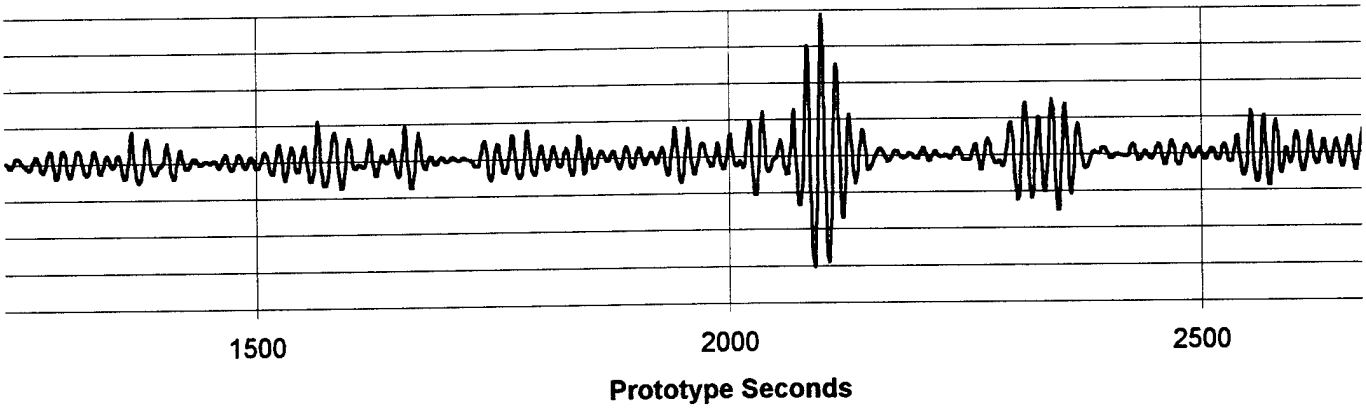
## Unfiltered Time History



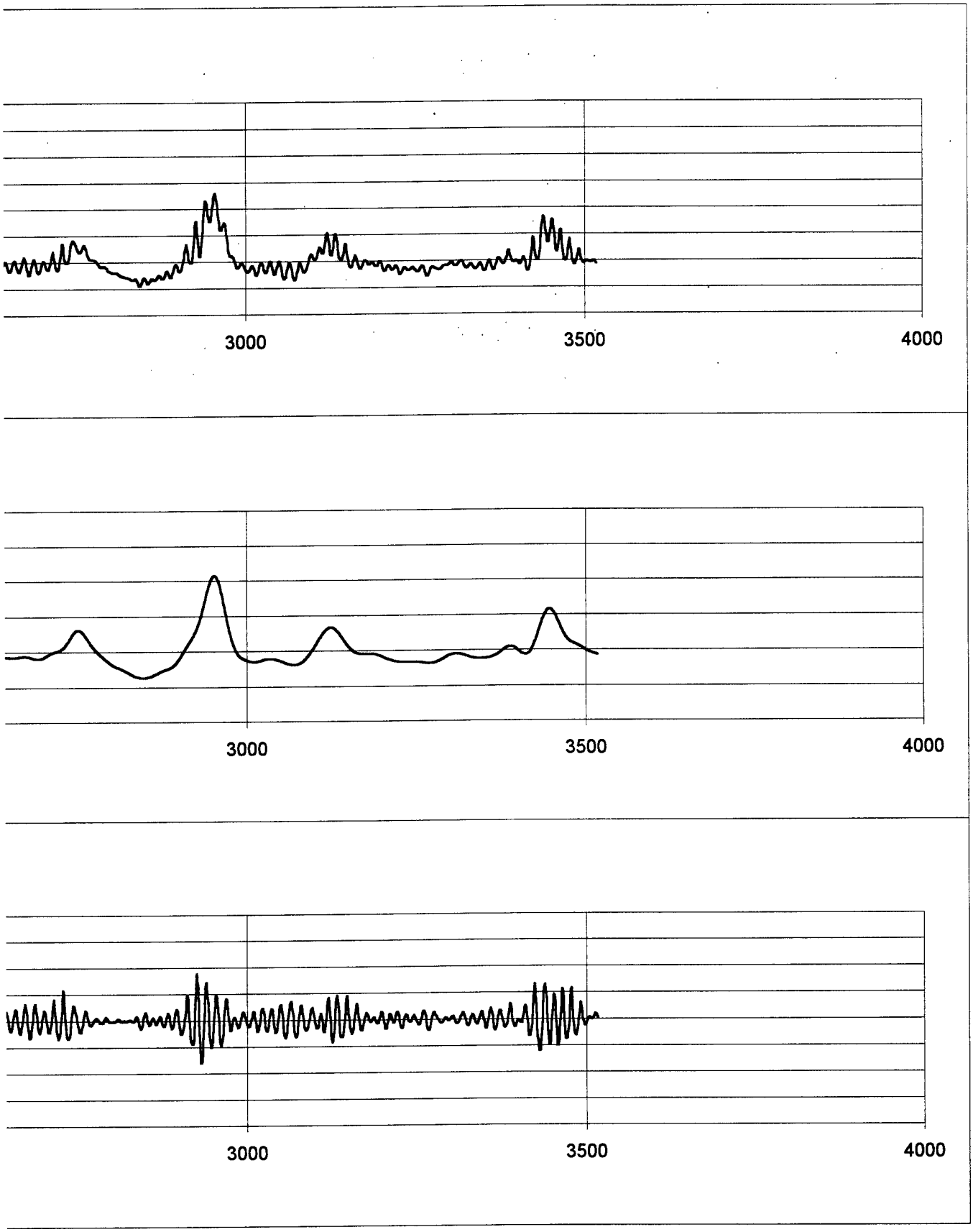

## Filtered Low Frequency Time History



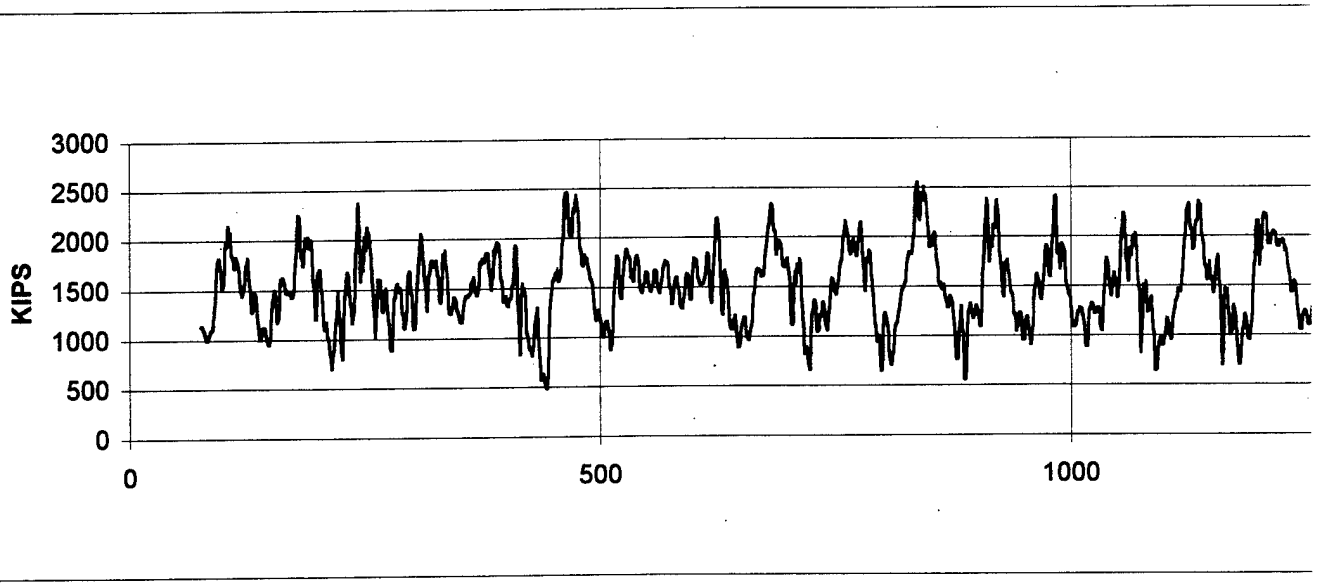

## Filtered High Frequency Time History

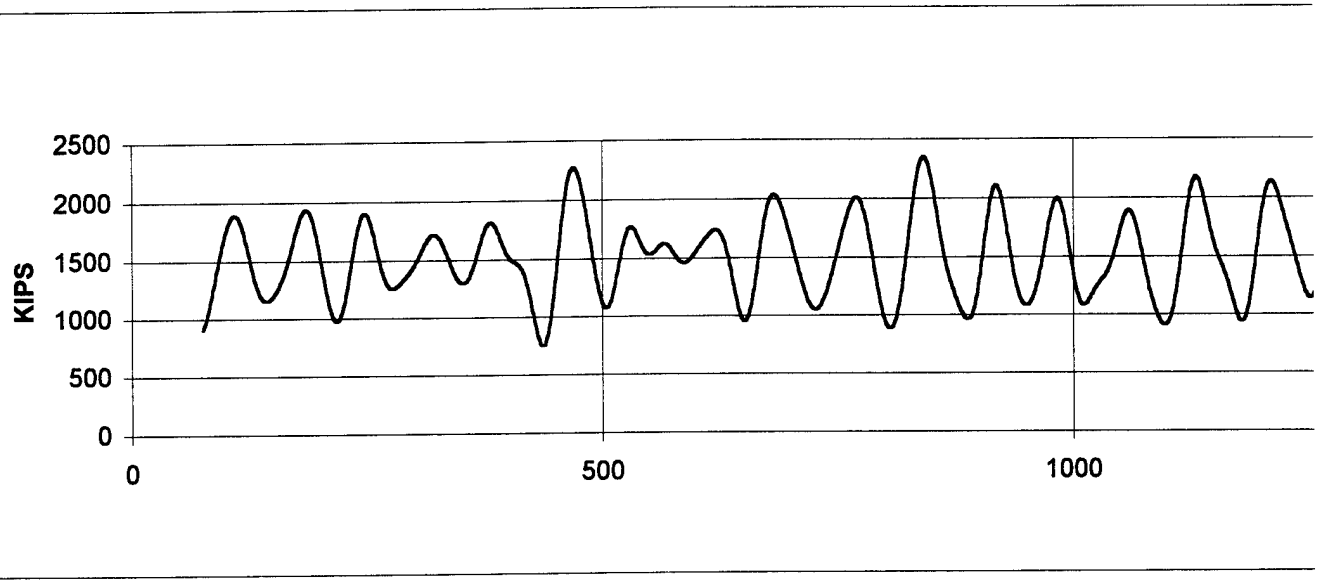


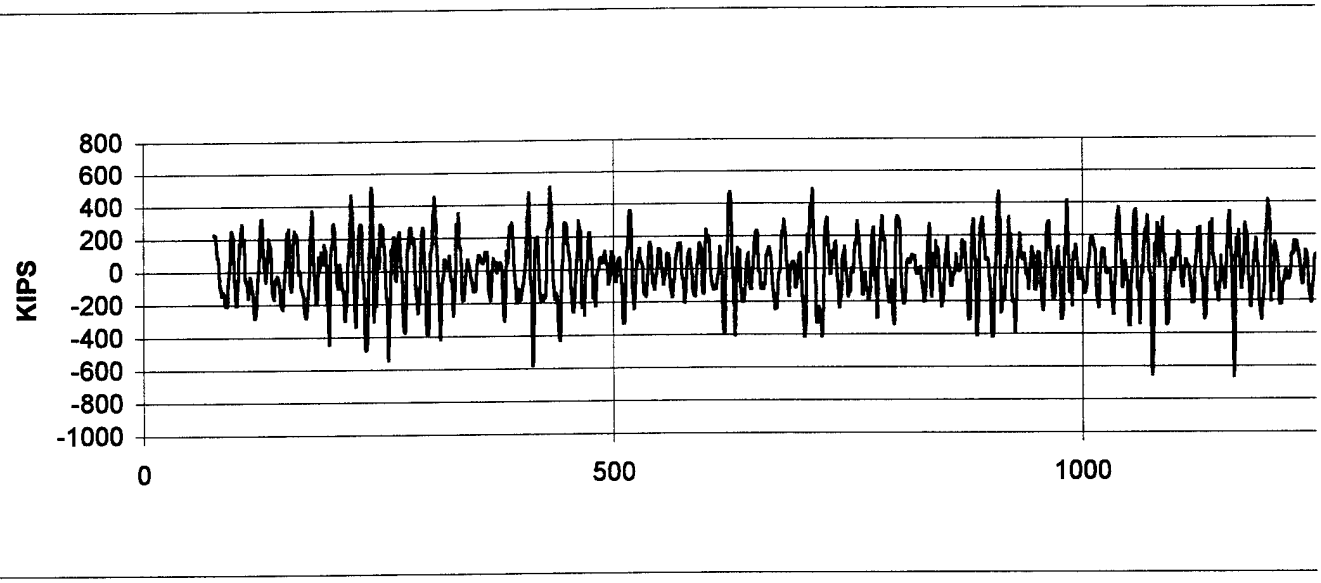
TEST A599 - ML_1



TEST A599 - BUOY 1 TENSION

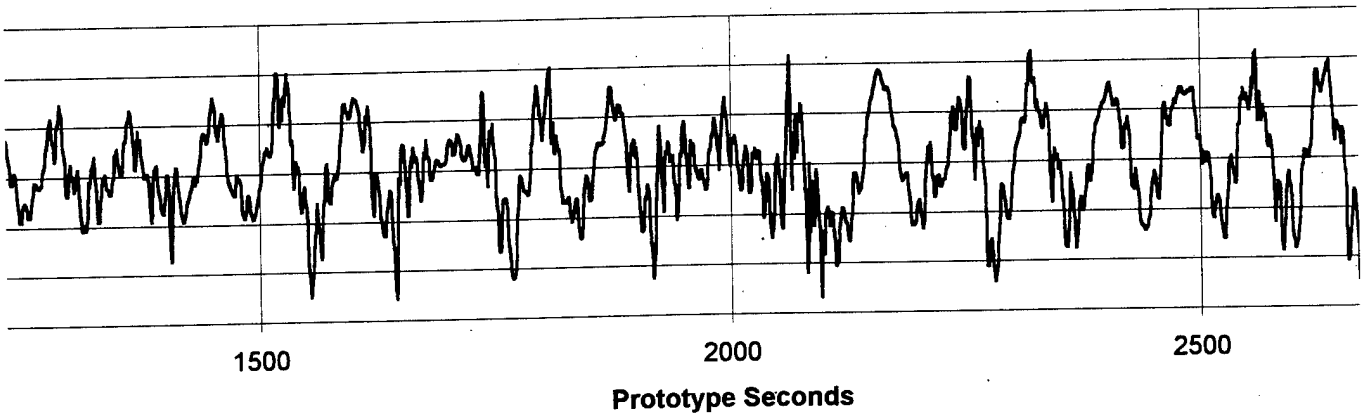


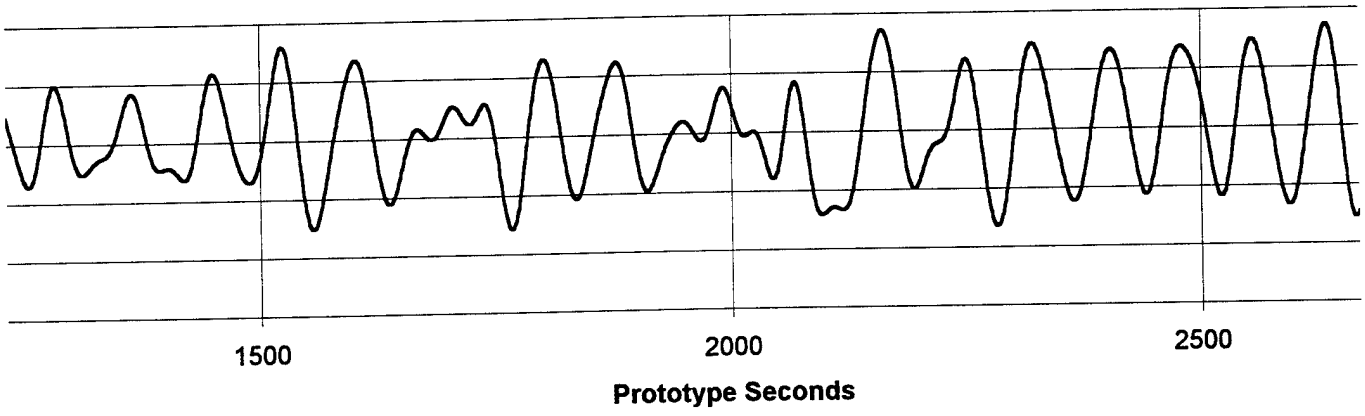



TEST A599 - BUOY 1 TENSION

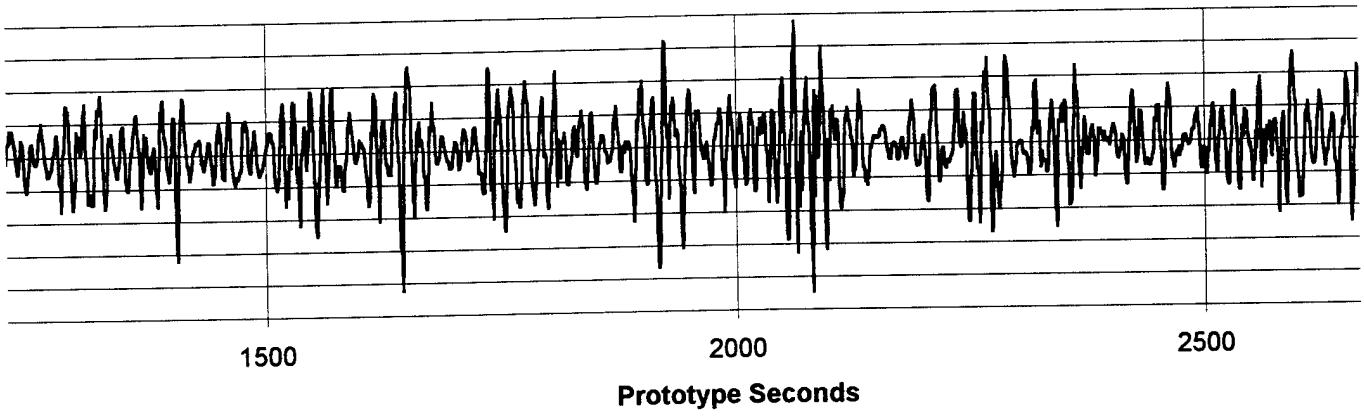
## Unfiltered Time History



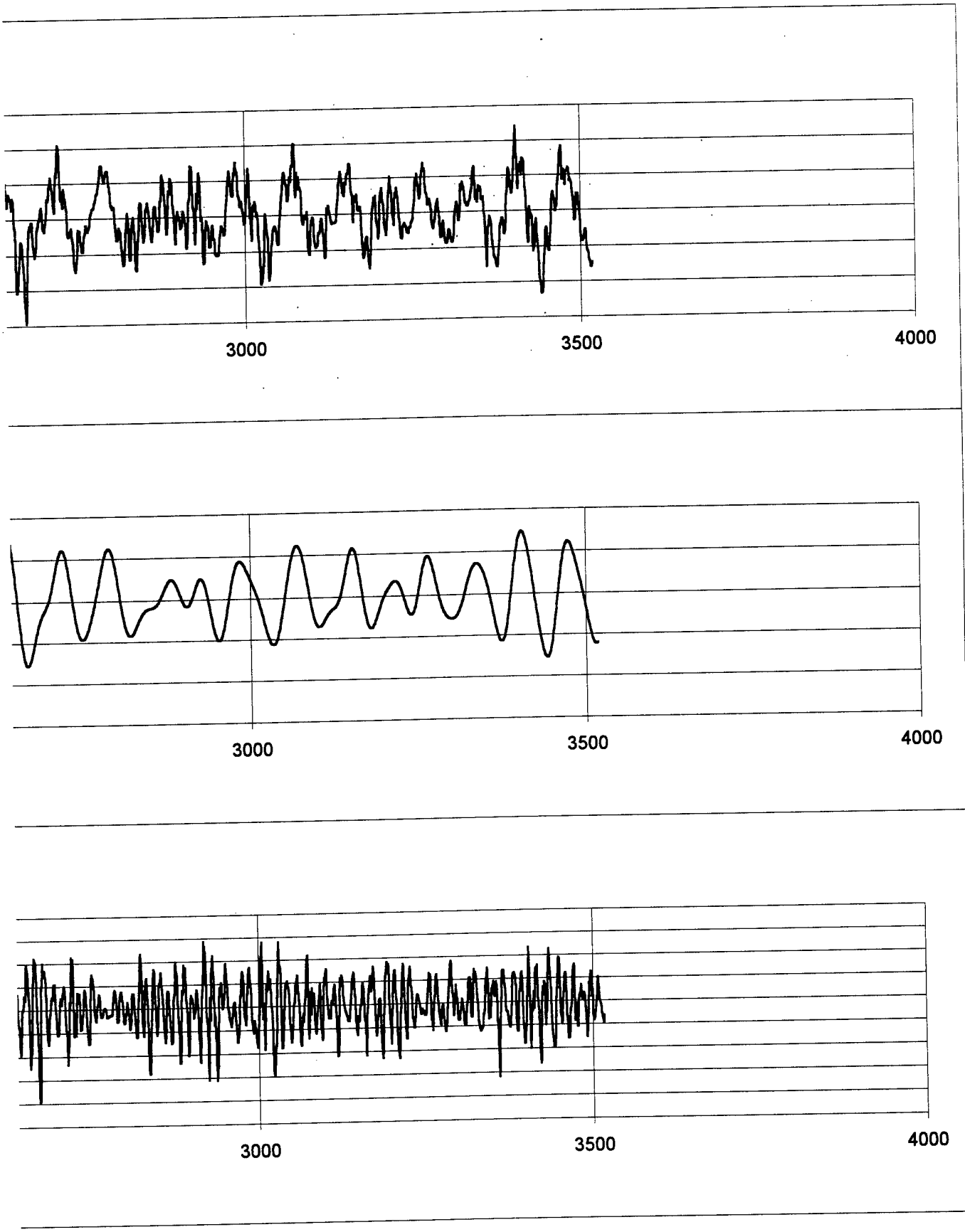

## Filtered Low Frequency Time History



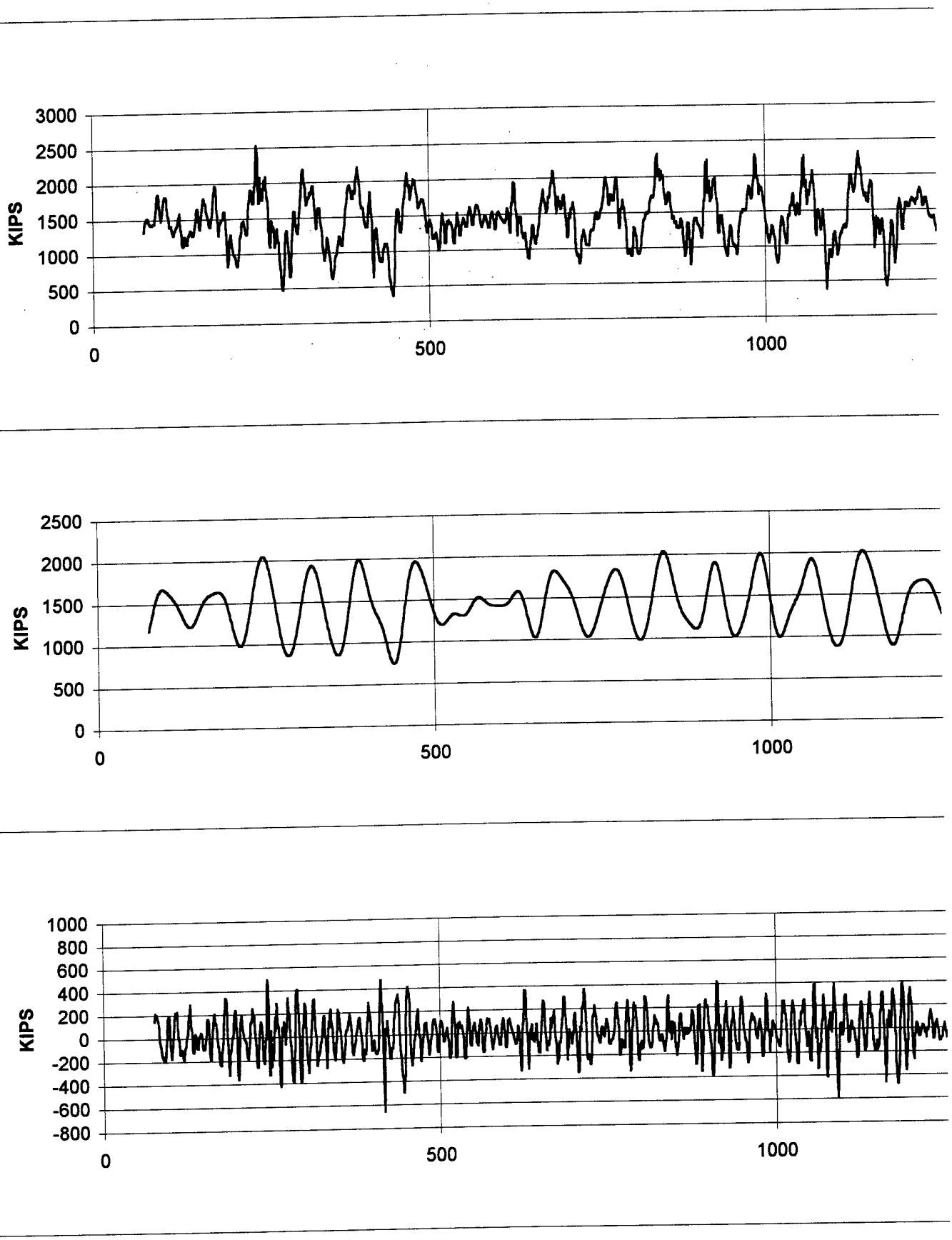

## Filtered High Frequency Time History



TEST A599 - BUOY 1 TENSION

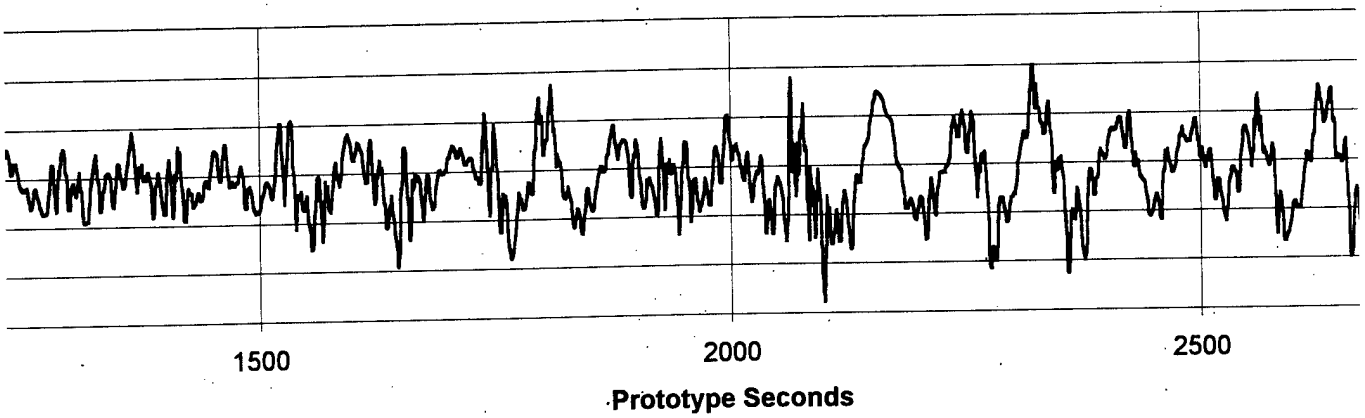


TEST A599 - BUOY 2 TENSION

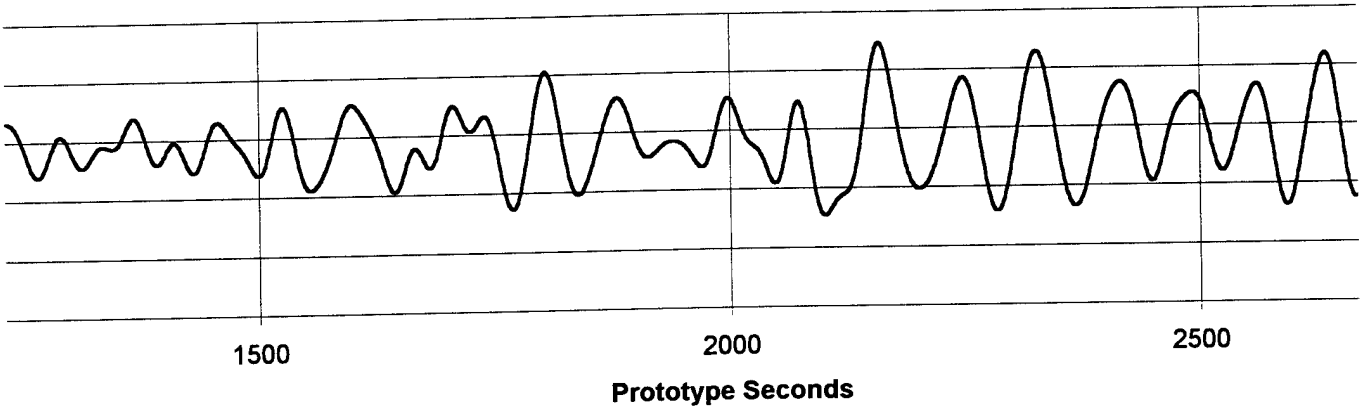


TEST A599 - BUOY 2 TENSION

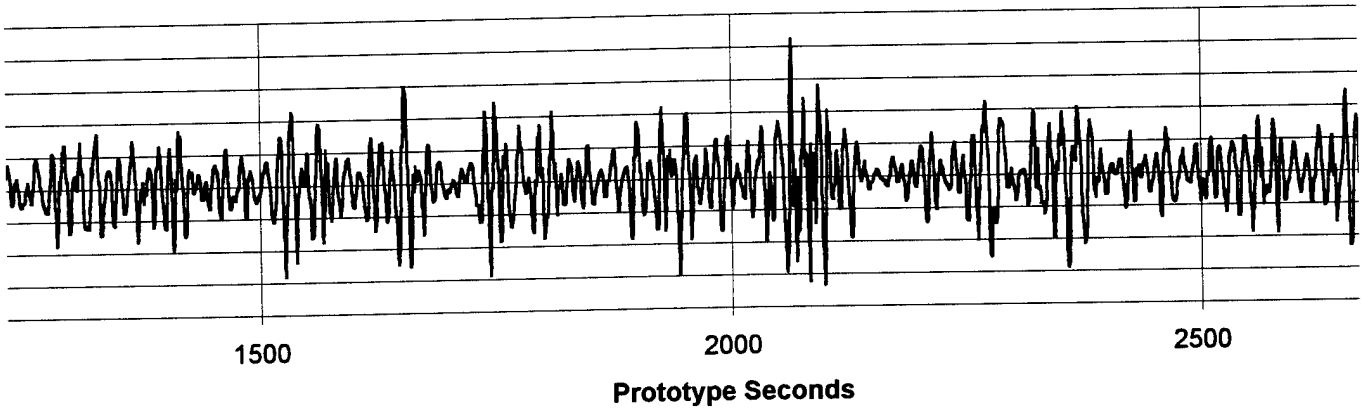
## Unfiltered Time History



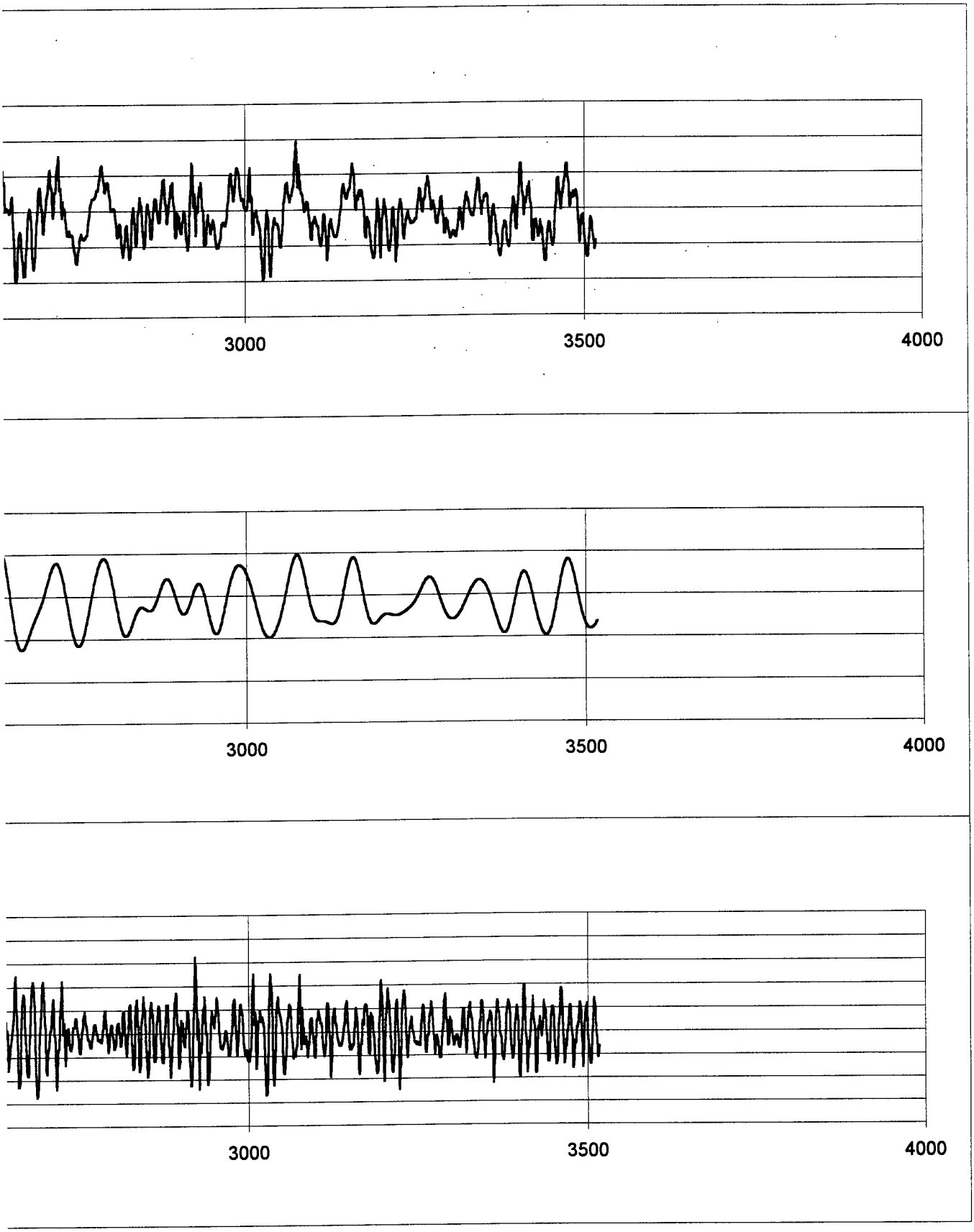

## Filtered Low Frequency Time History



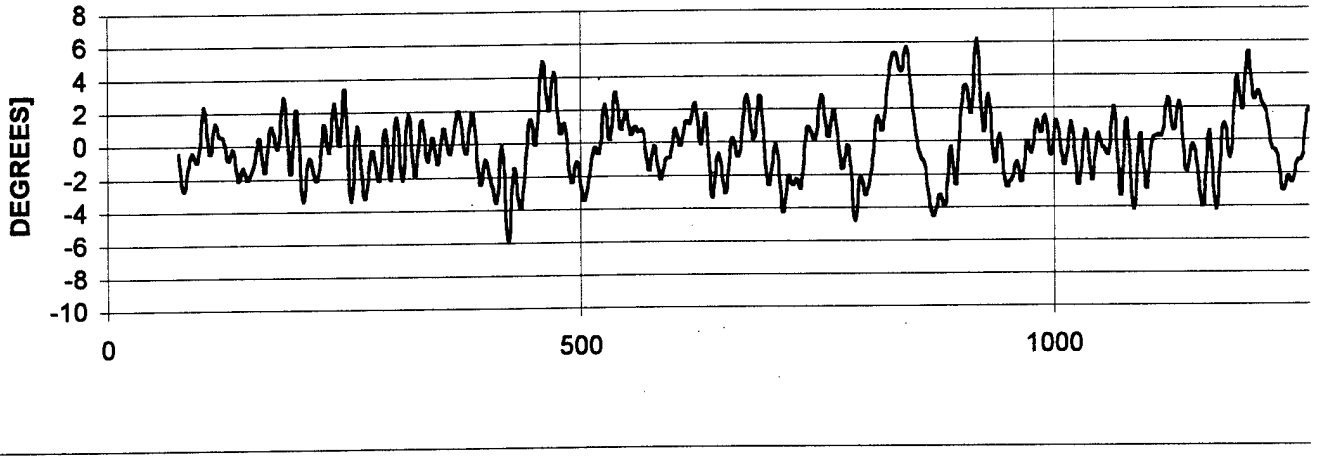

## Filtered High Frequency Time History

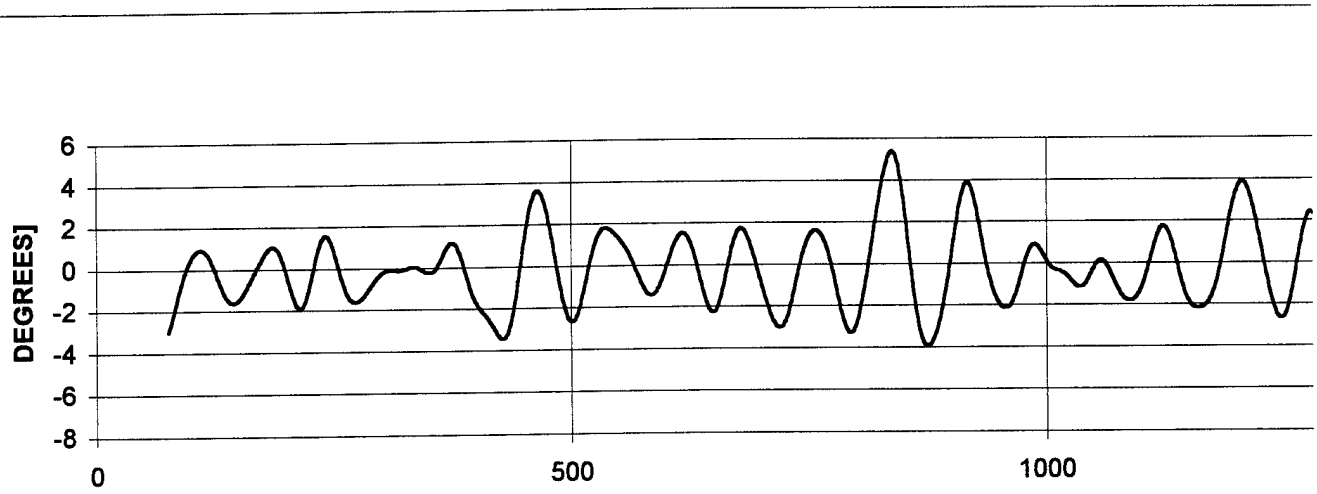


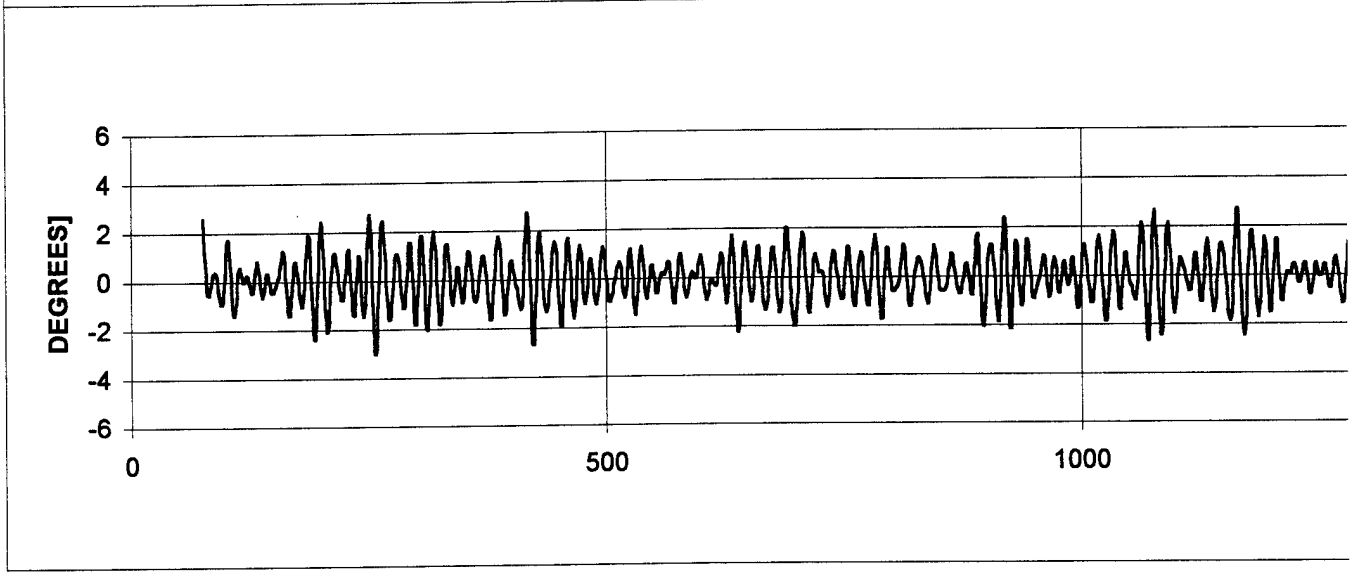
TEST A599 - BUOY 2 TENSION



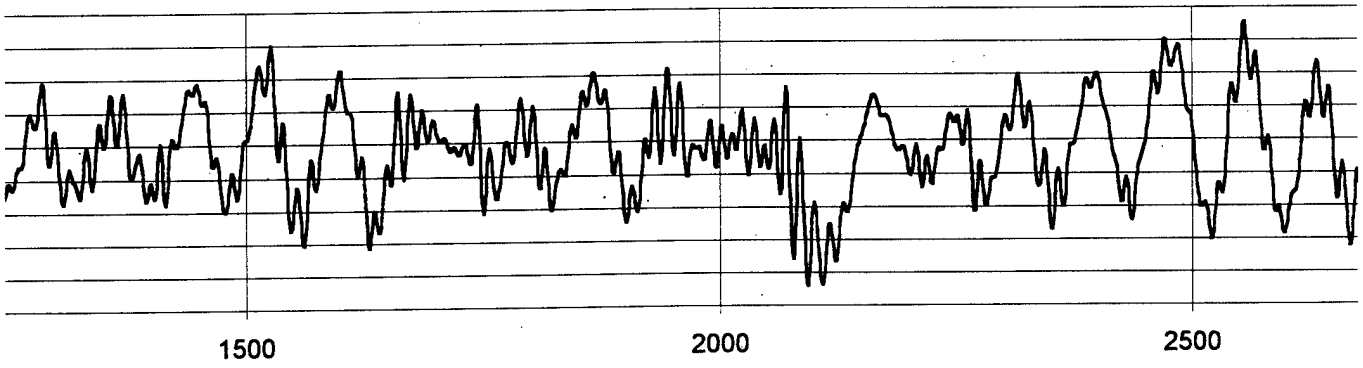
TEST A599 - PITCH



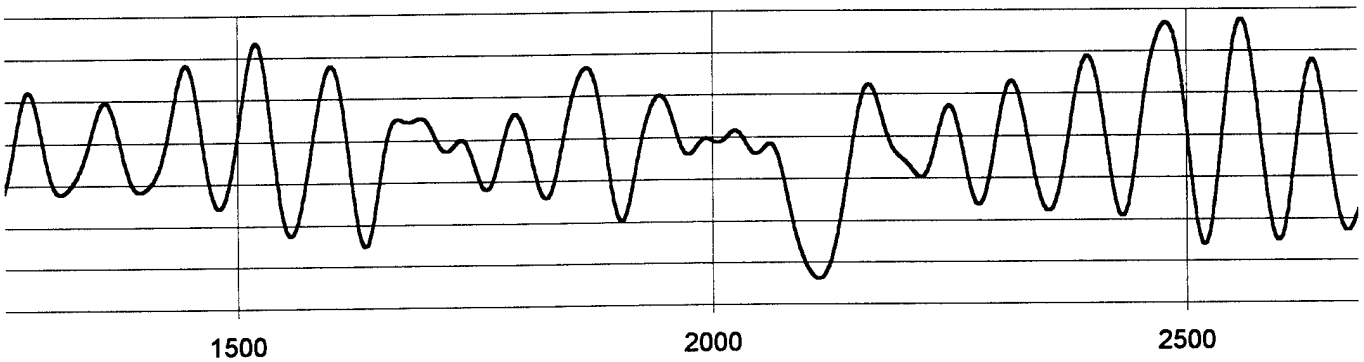



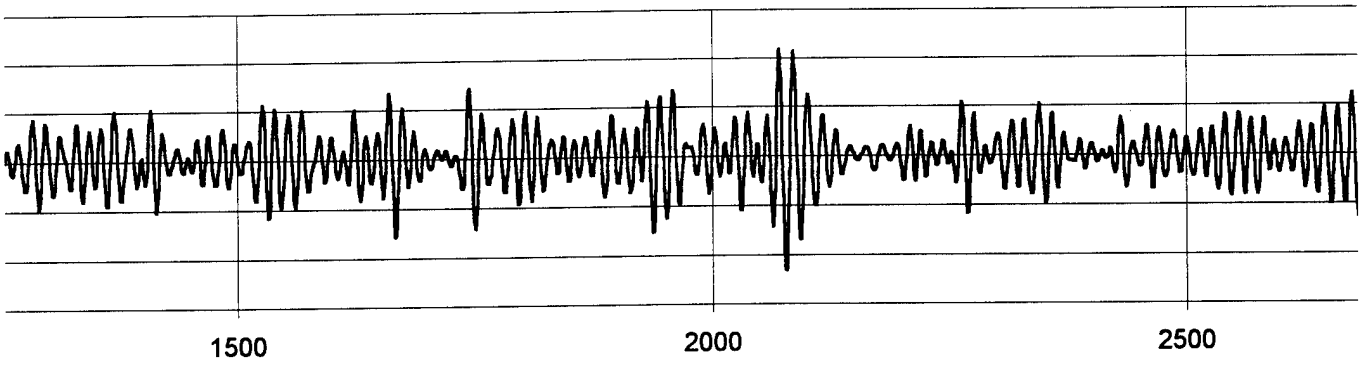
## Unfiltered Time History



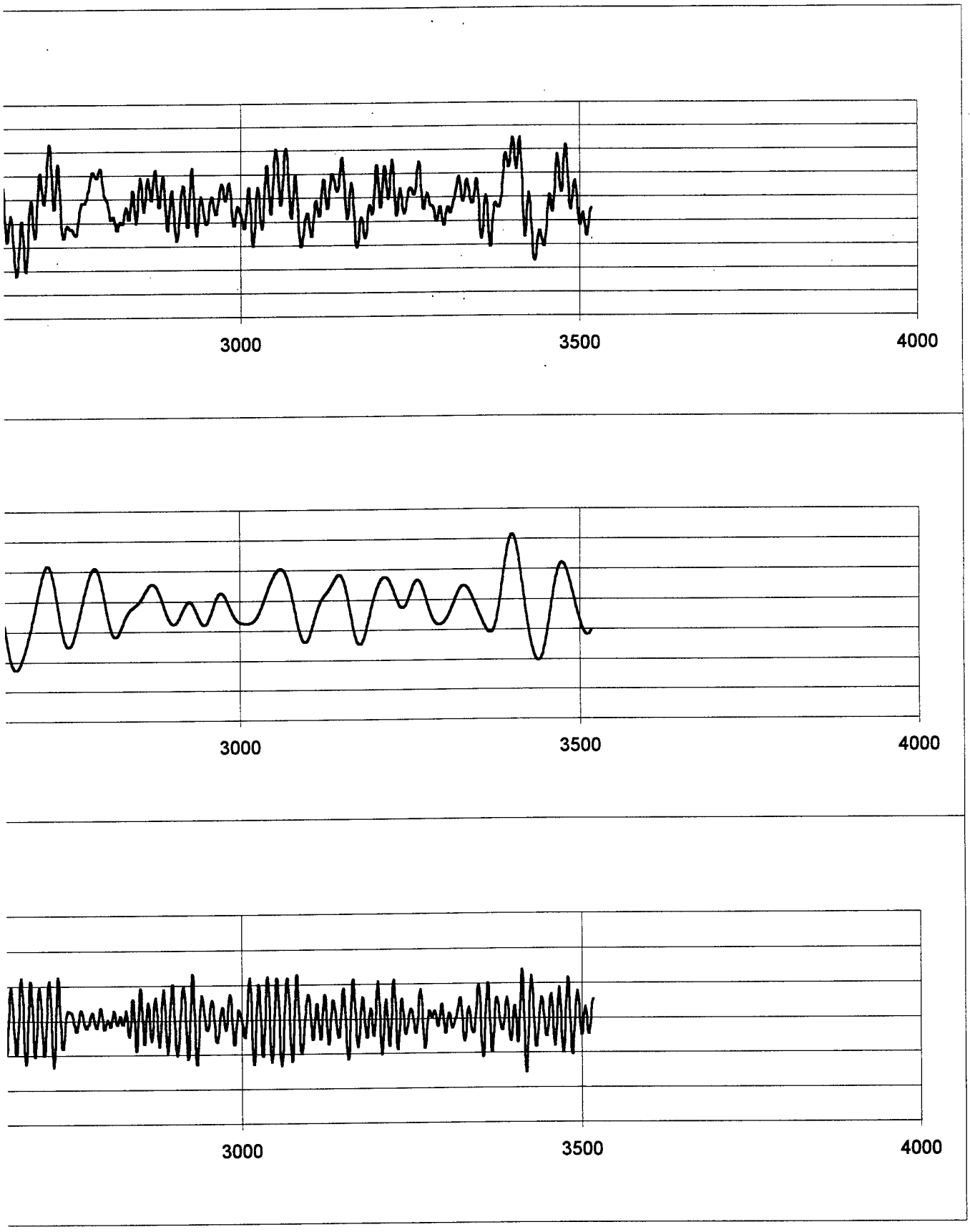

## Filtered Low Frequency Time History



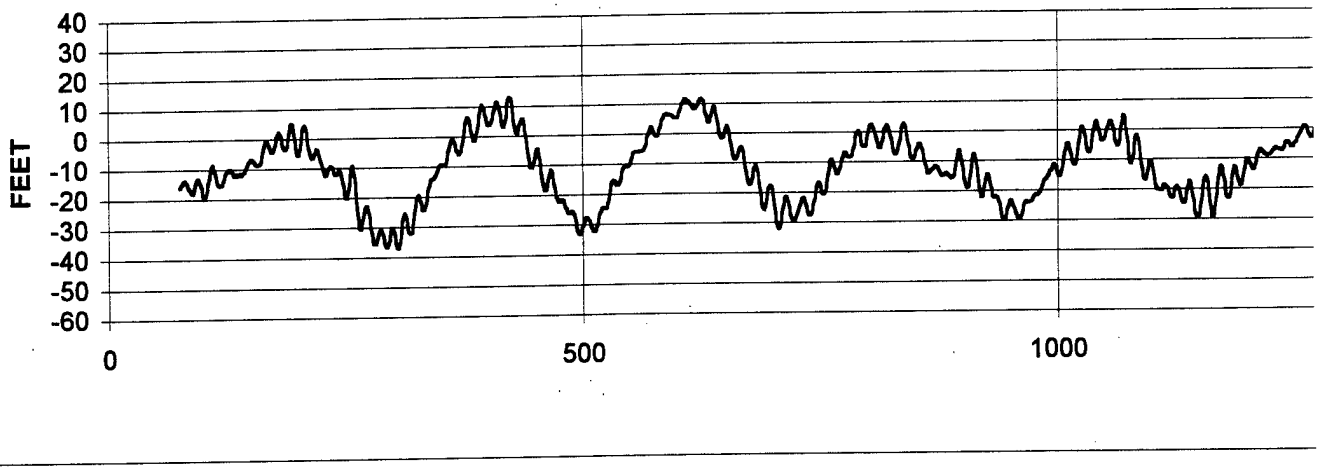

## Filtered High Frequency Time History

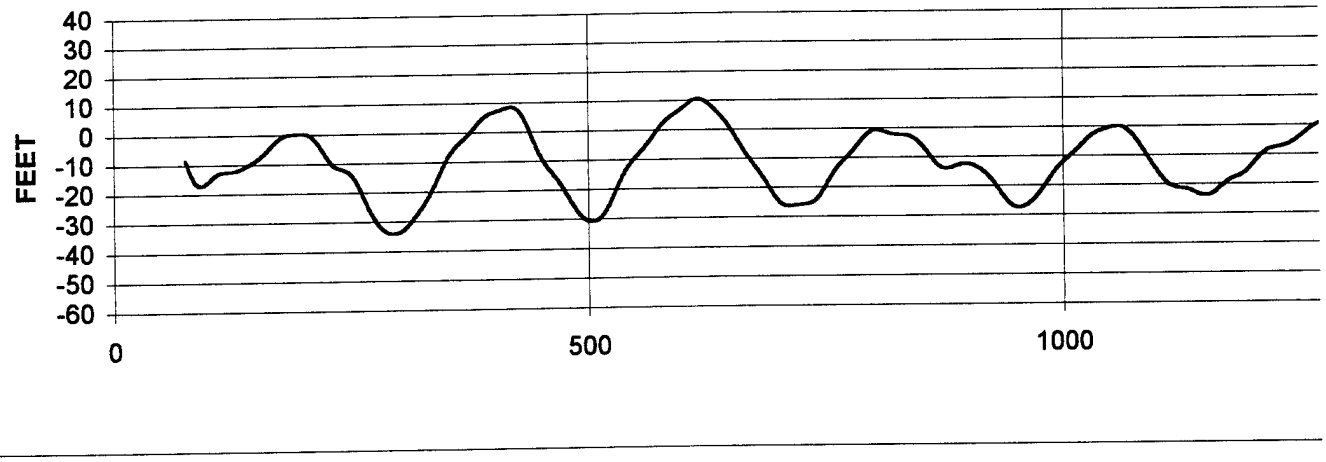


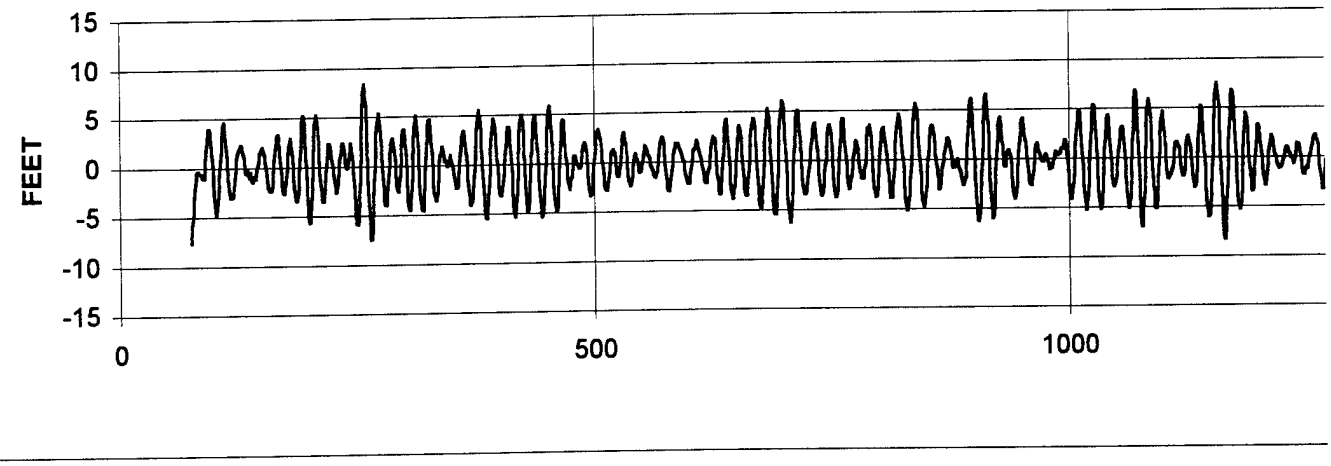
TEST A599 - PITCH



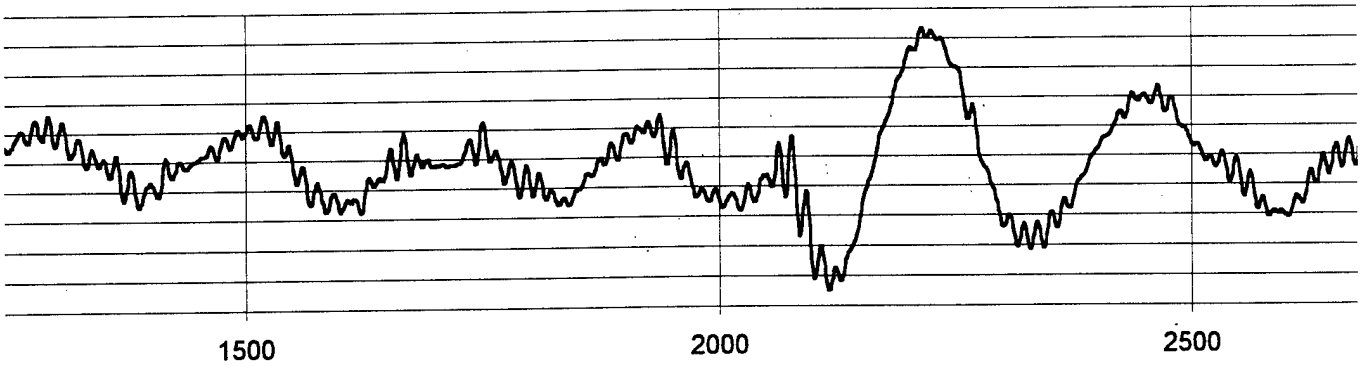
TEST A599 - PT SURGE



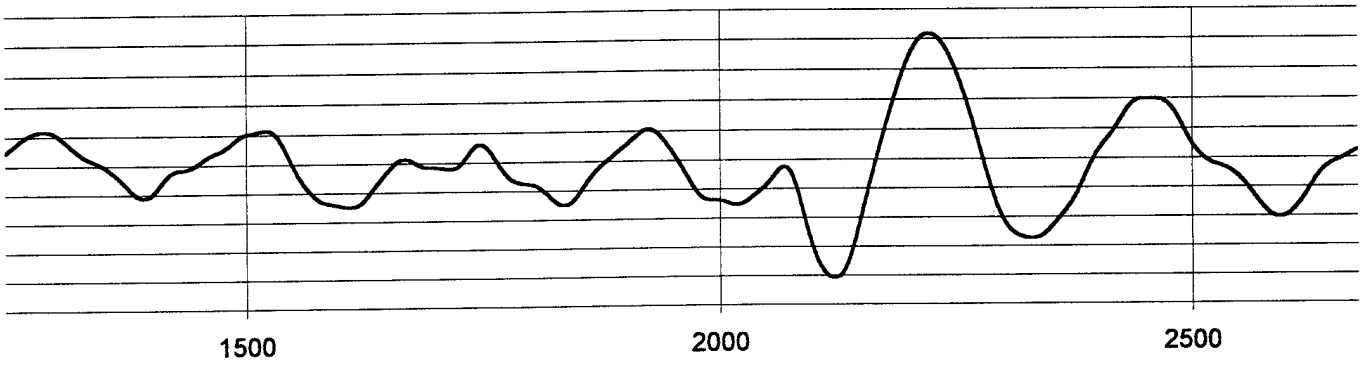



## Unfiltered Time History



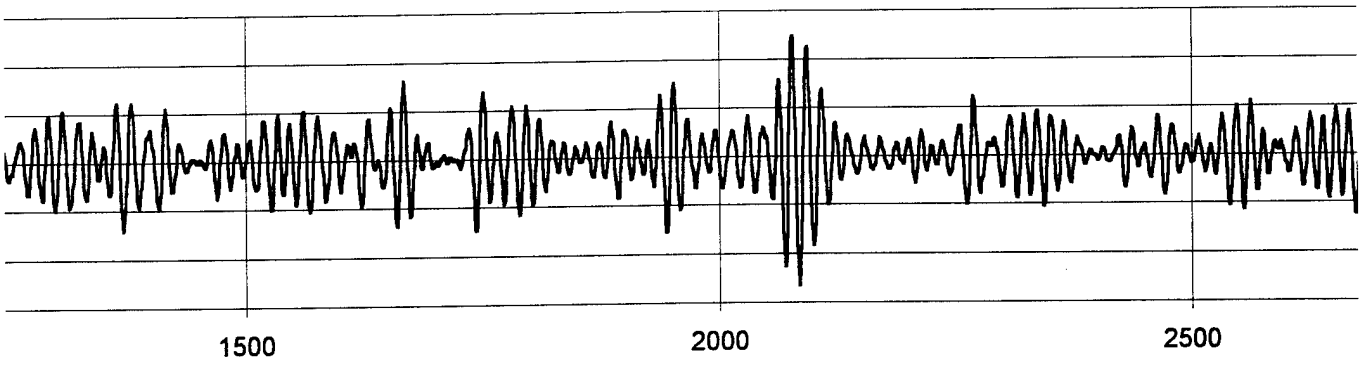

**Prototype Seconds**

## Filtered Low Frequency Time History



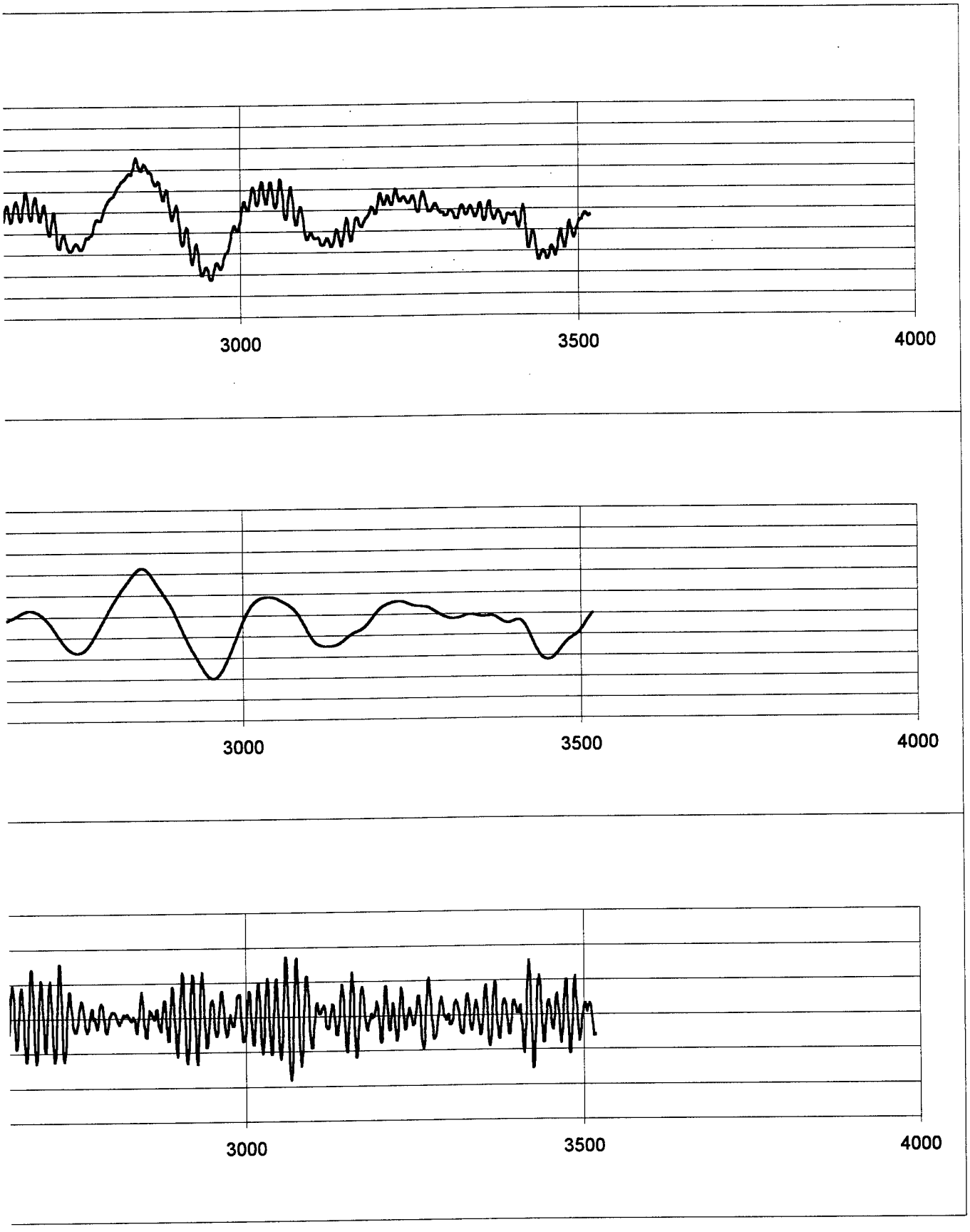

**Prototype Seconds**

## Filtered High Frequency Time History

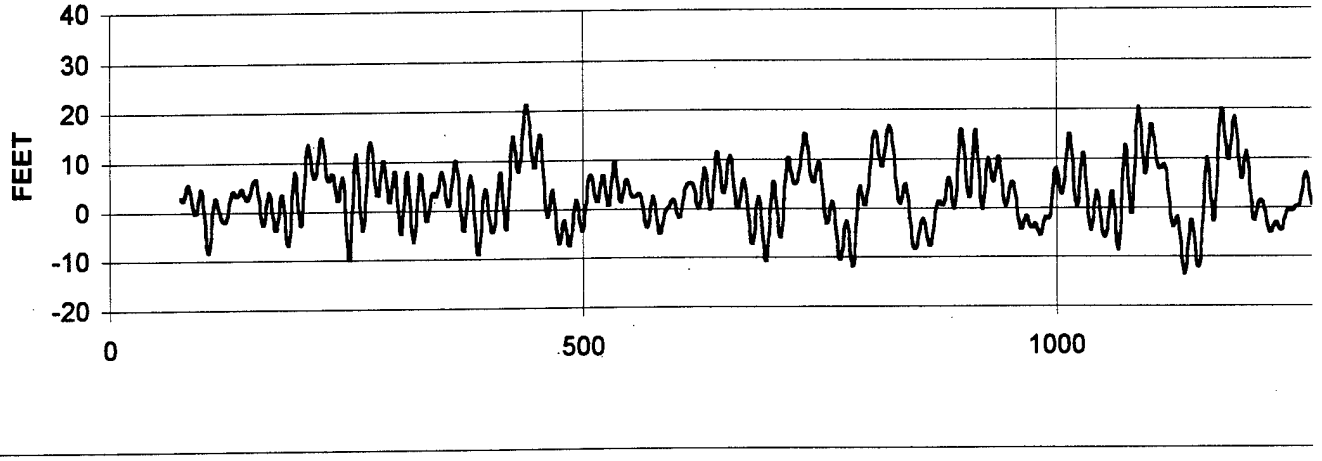


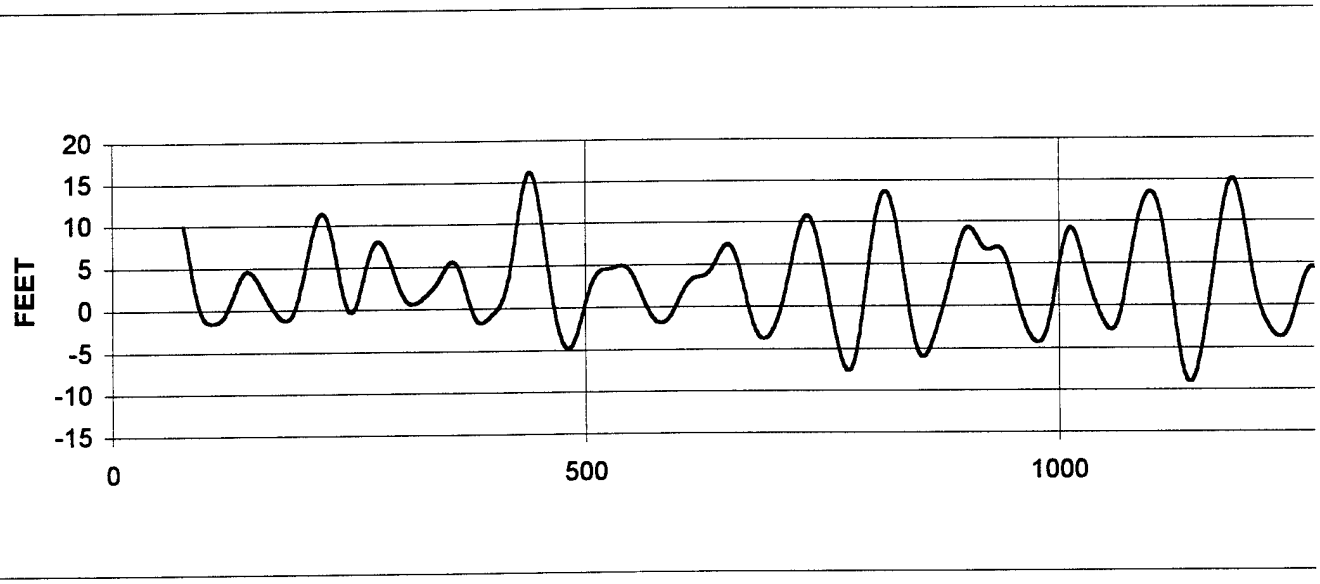

**Prototype Seconds**

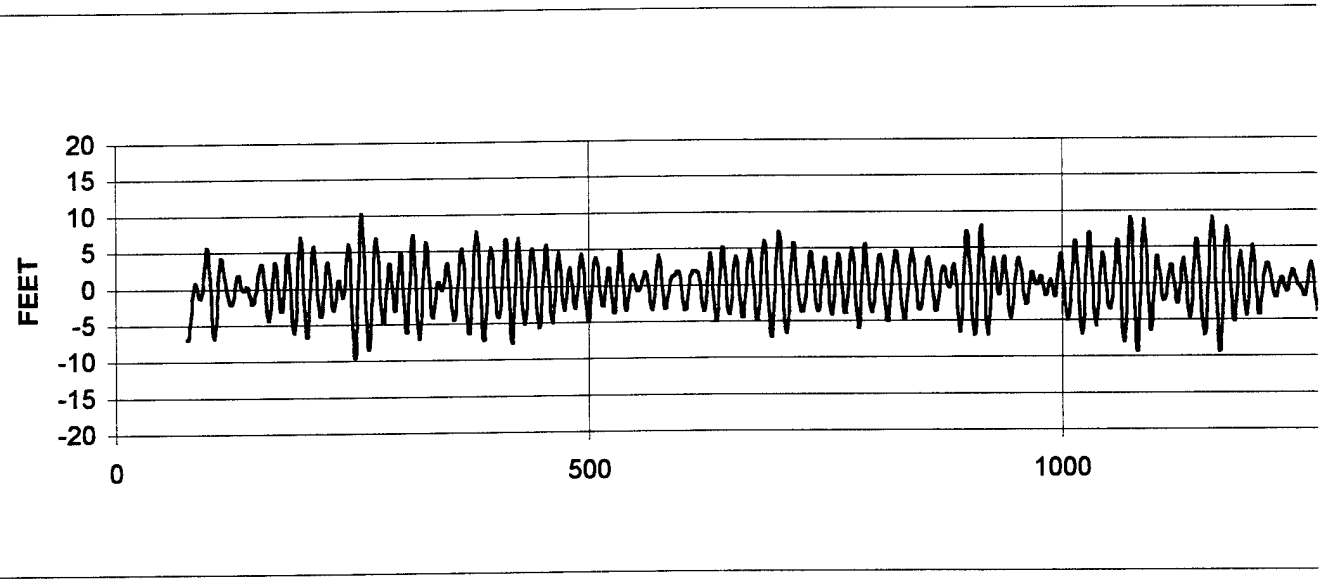
TEST A599 - PT SURGE



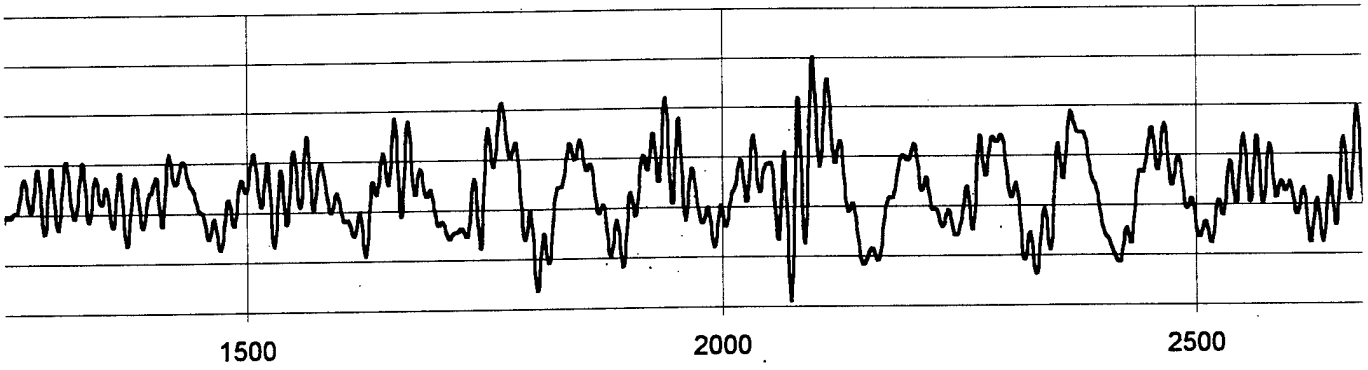
TEST A599 - PT HEAVE



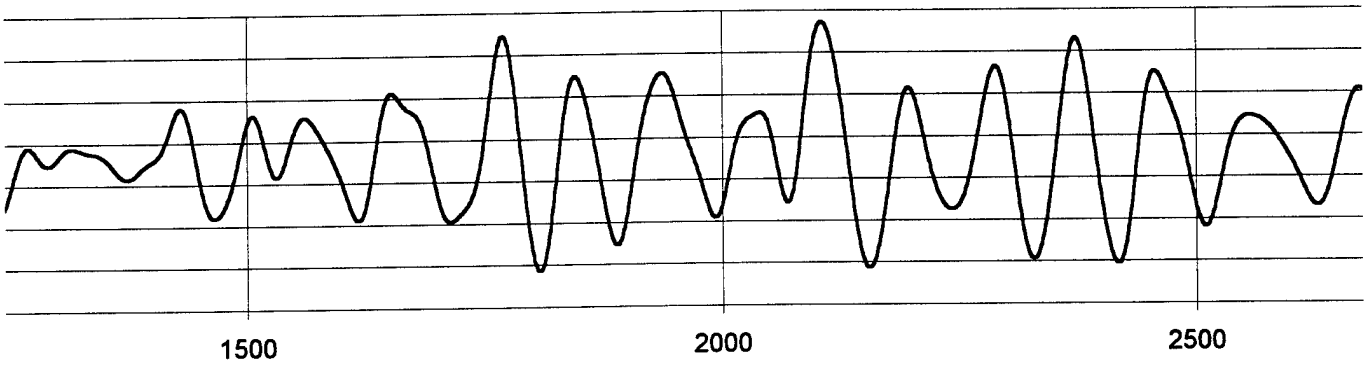



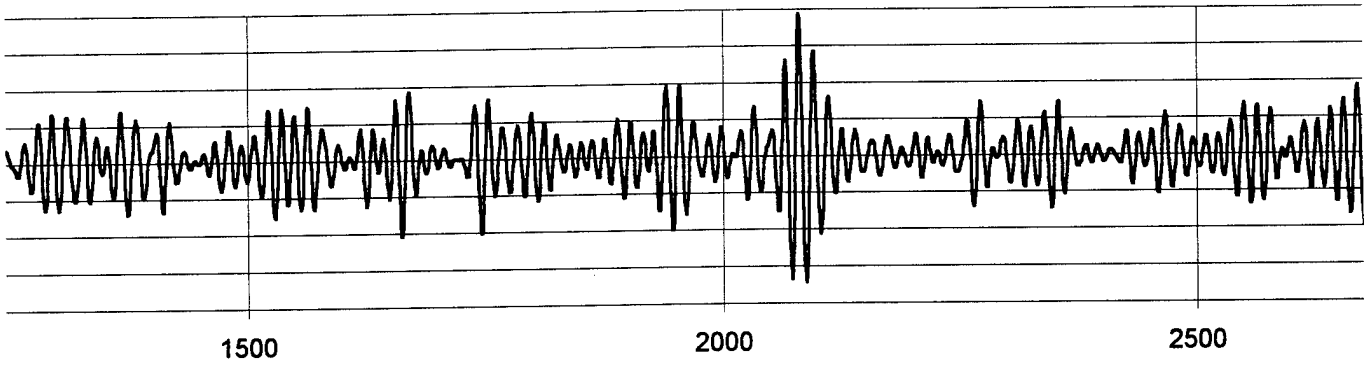
## Unfiltered Time History



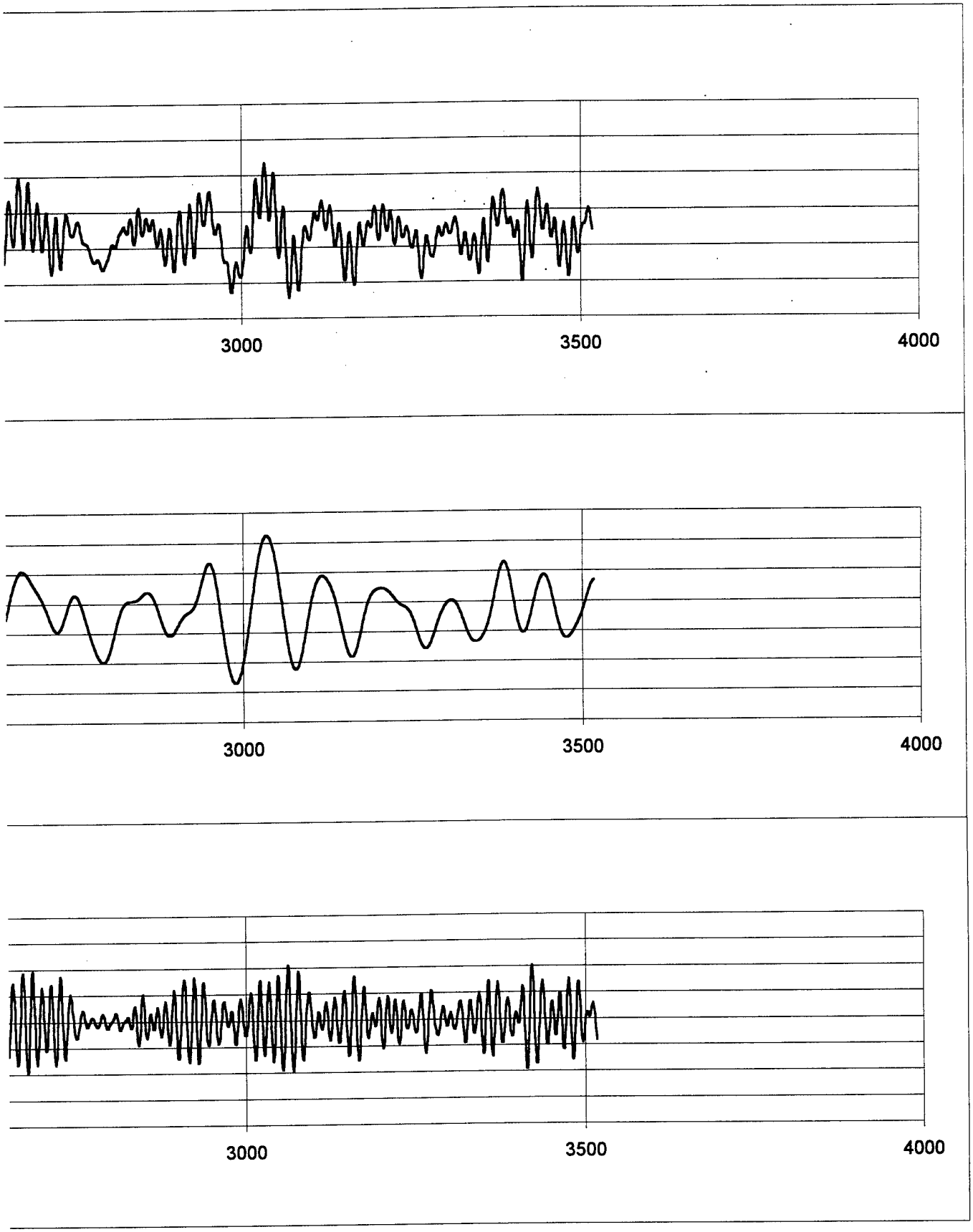

## Filtered Low Frequency Time History



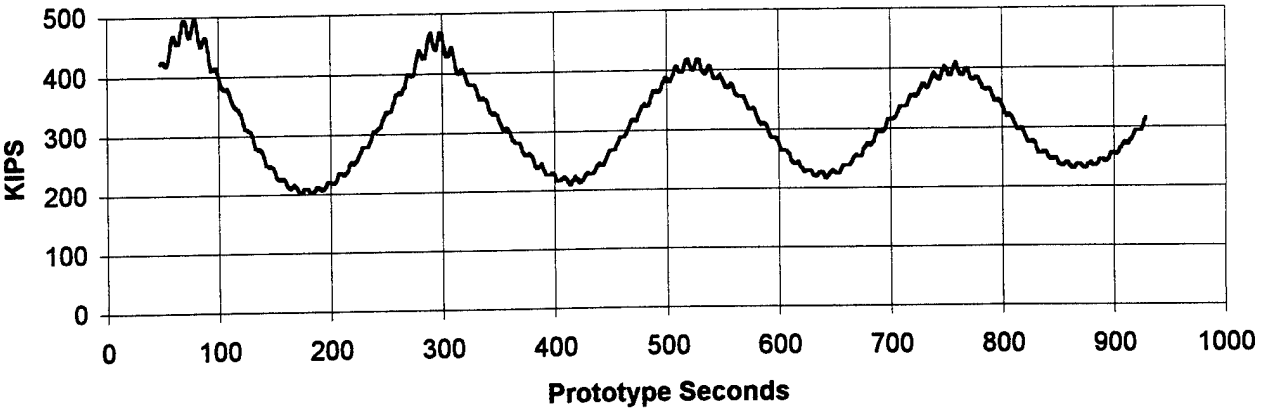

## Filtered High Frequency Time History



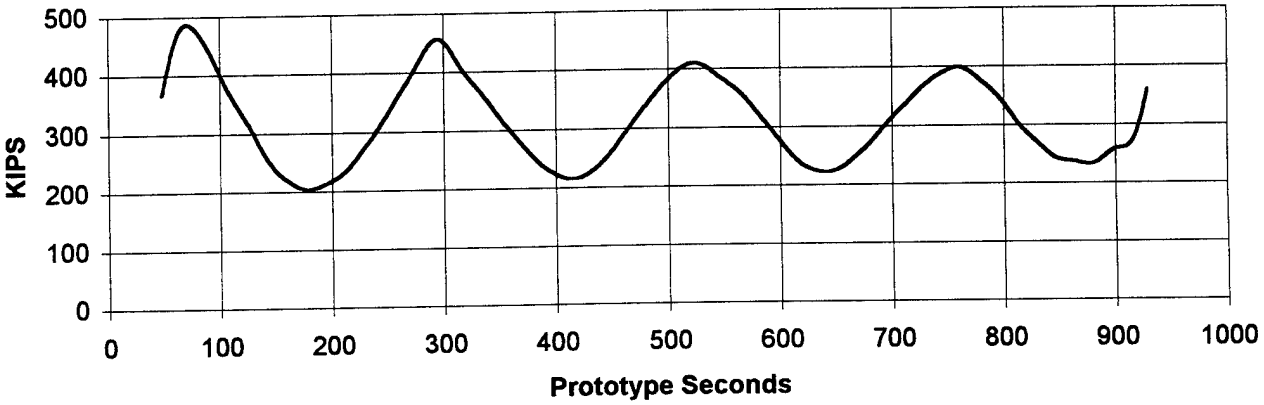
TEST A599 - PT HEAVE



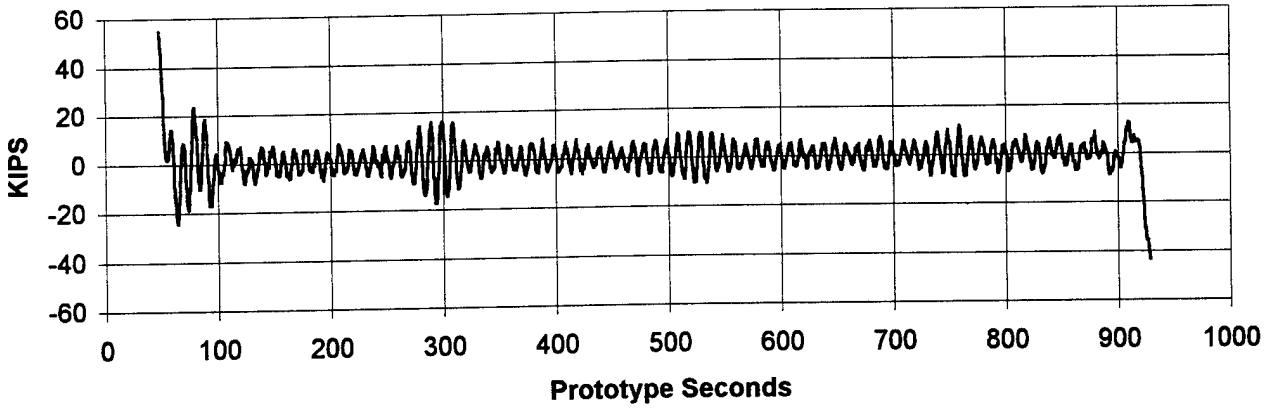
## Unfiltered Time History




## Filtered Low Frequency Time History

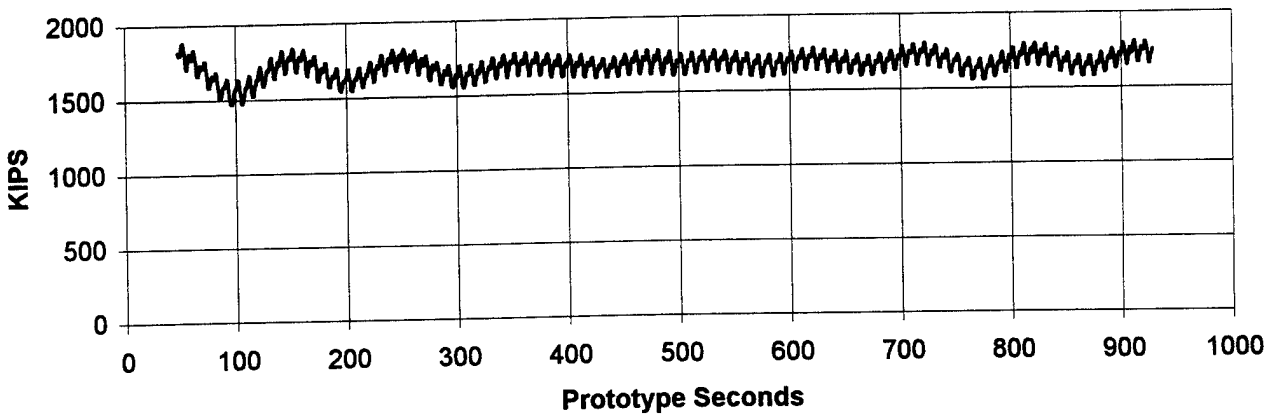



## Filtered High Frequency Time History

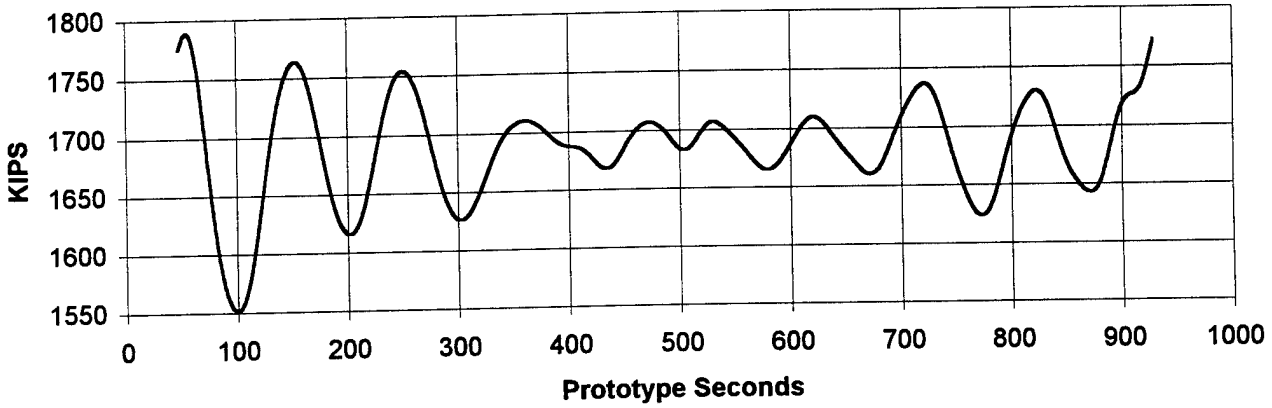


TEST A603 - BT_1 TENSION

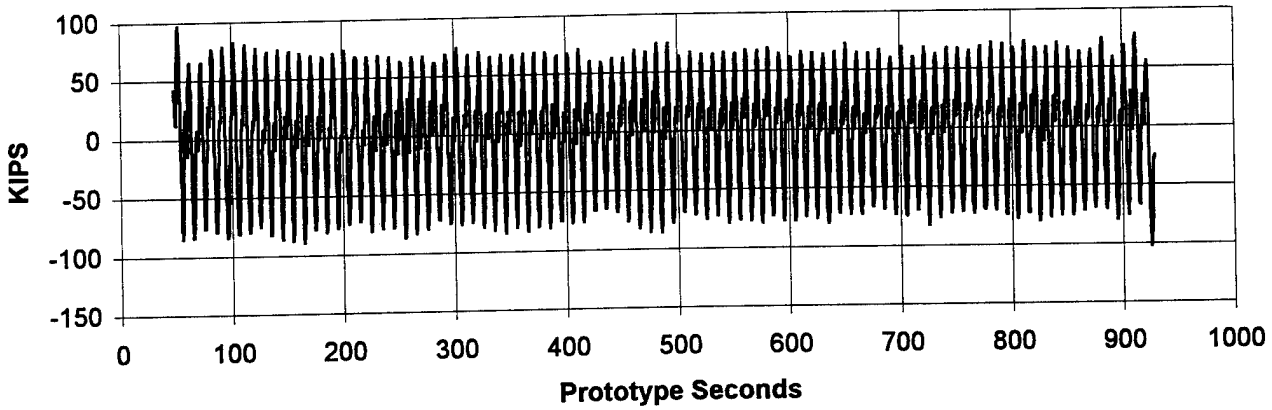
## Unfiltered Time History



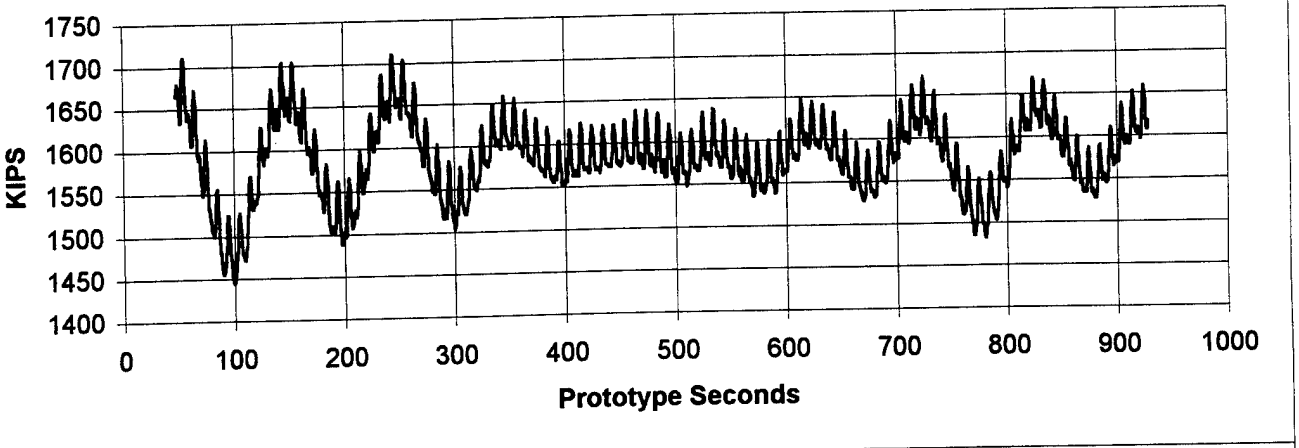

## Filtered Low Frequency Time History

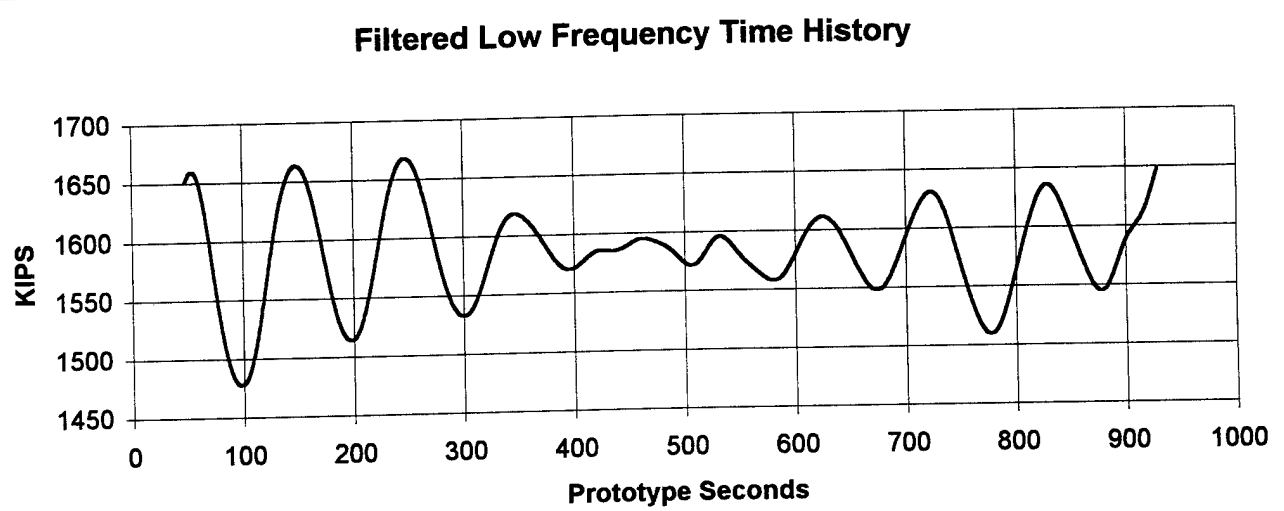


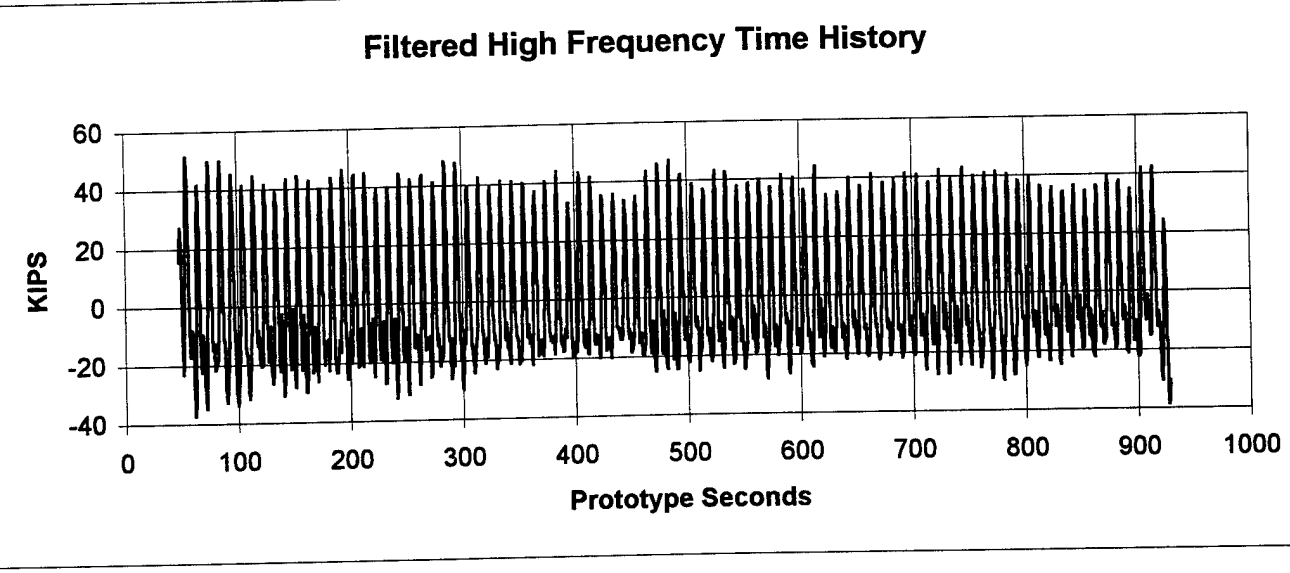

## Filtered High Frequency Time History



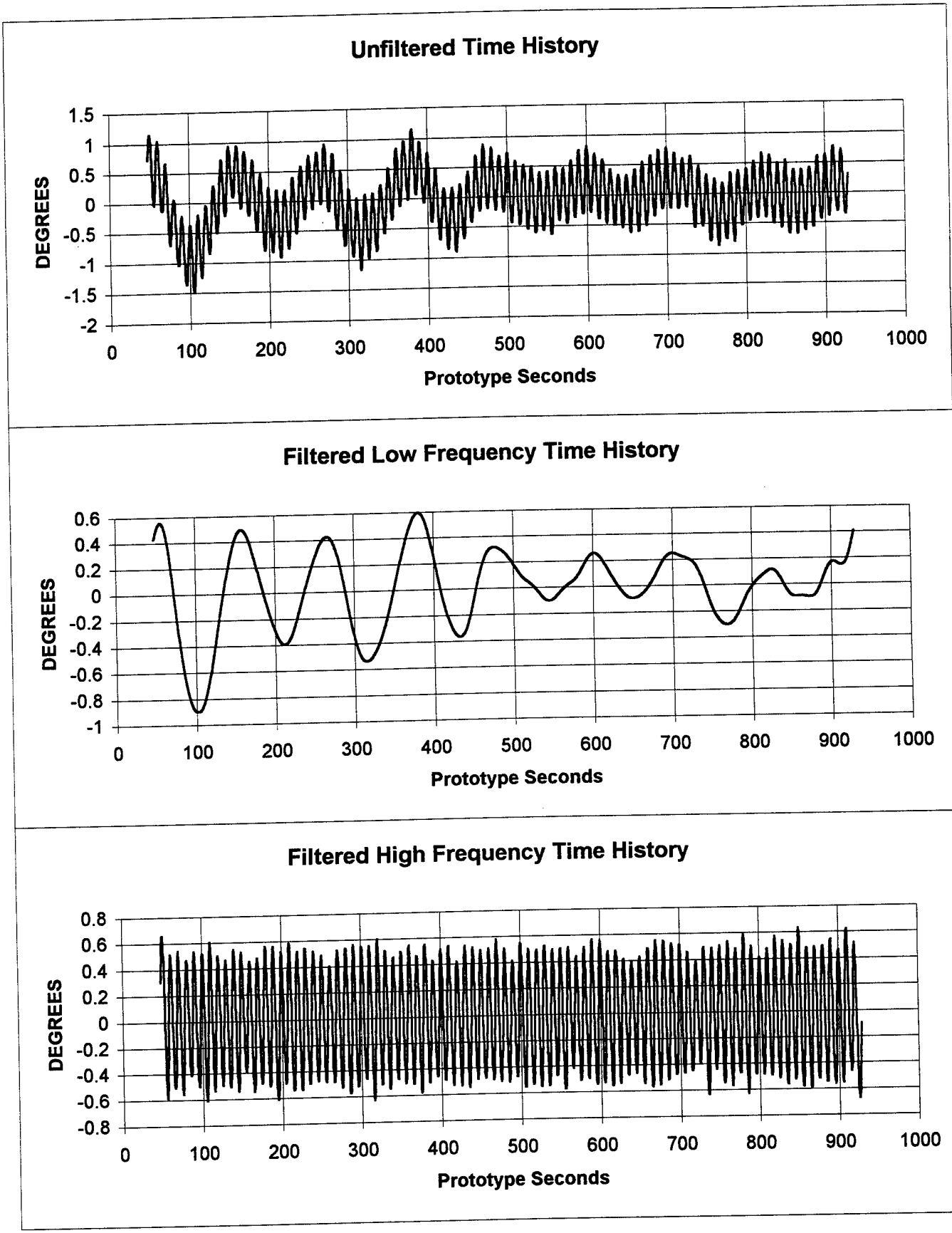
TEST A603 - BOUY 2 TENSION



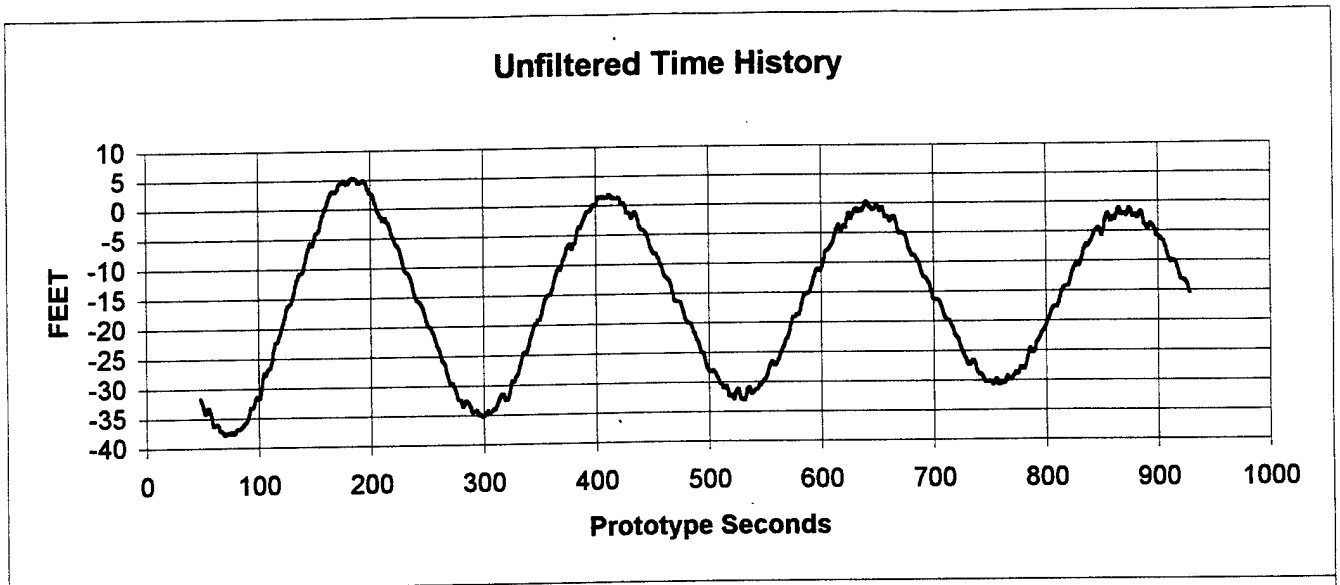



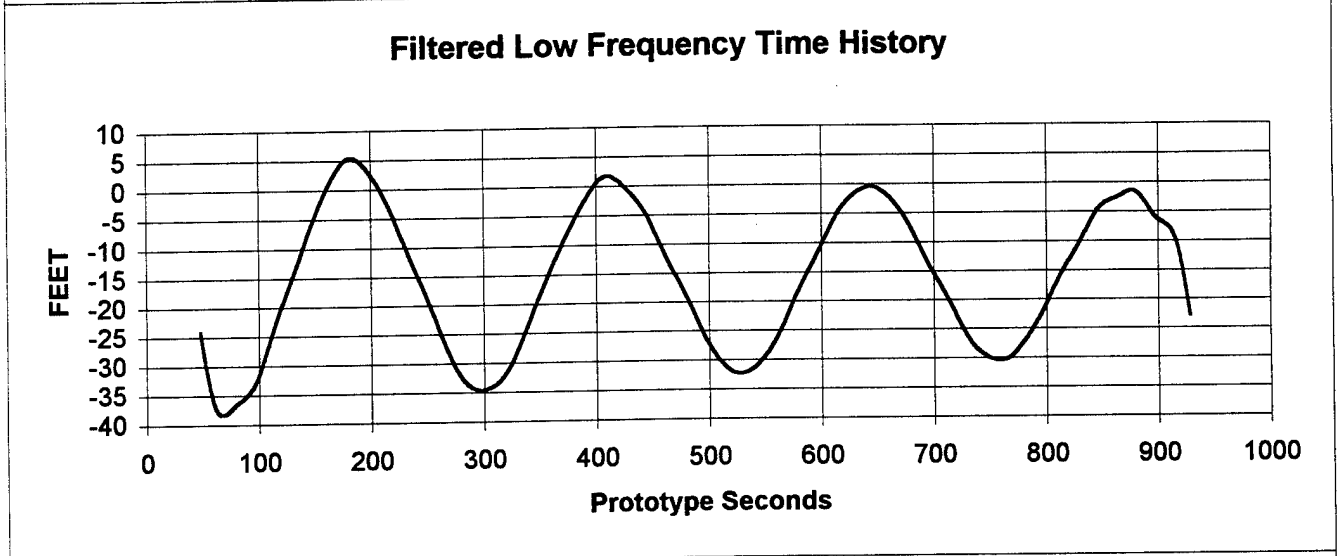



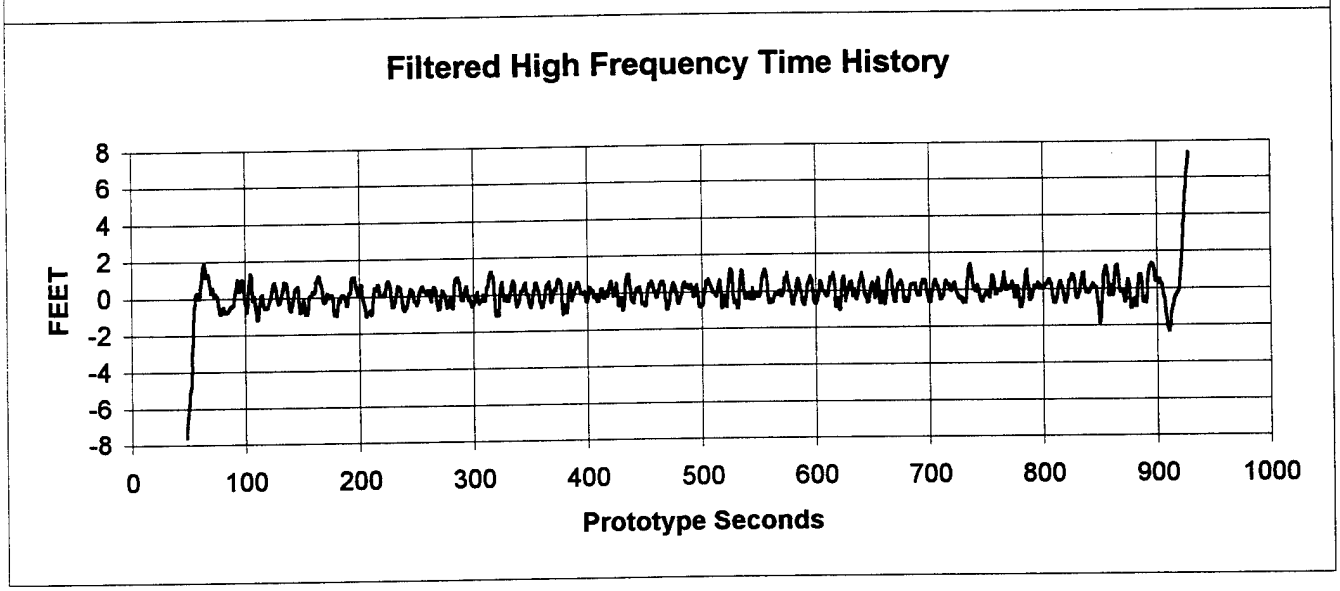
TEST A603 - PITCH



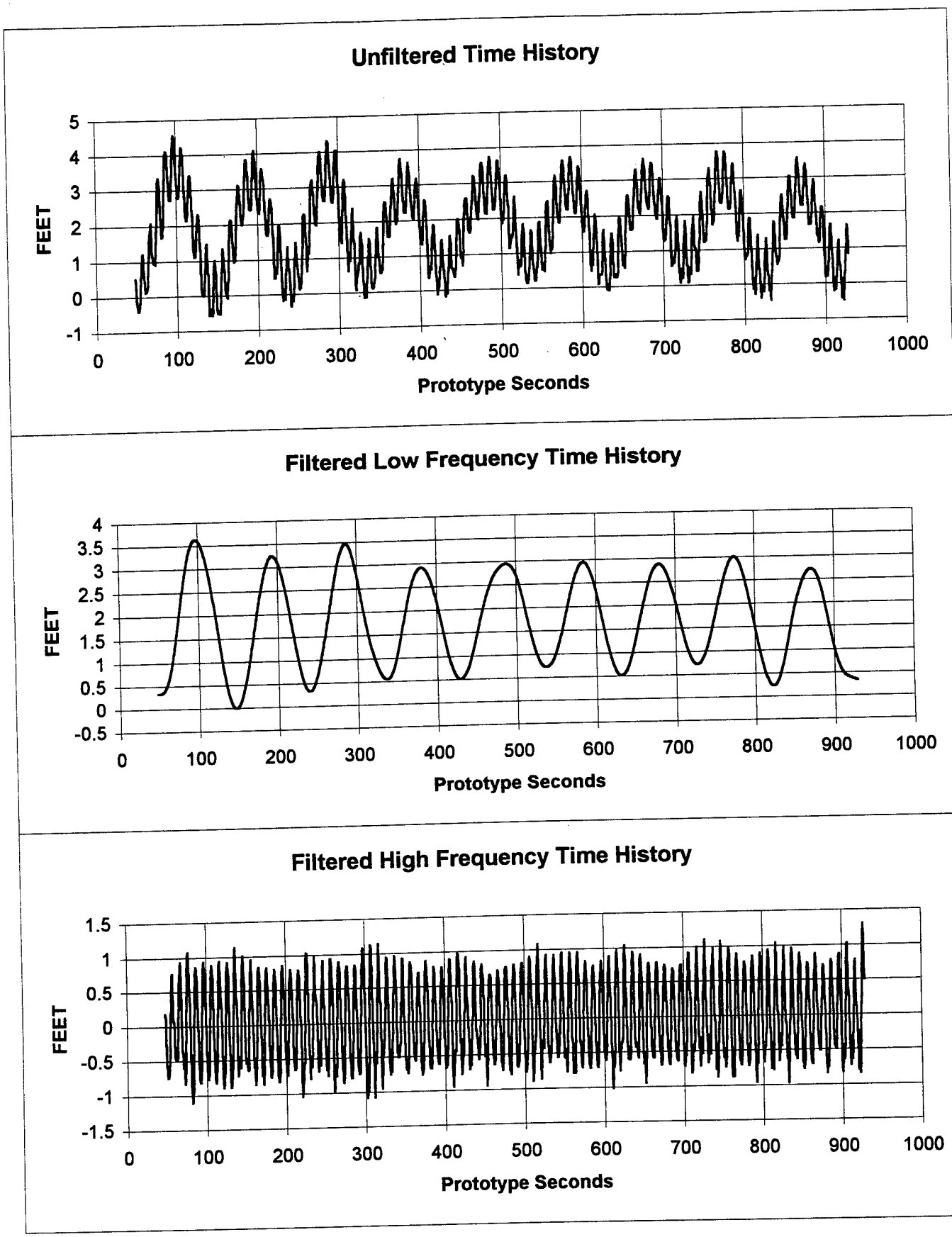
TEST A603 - PT SURGE



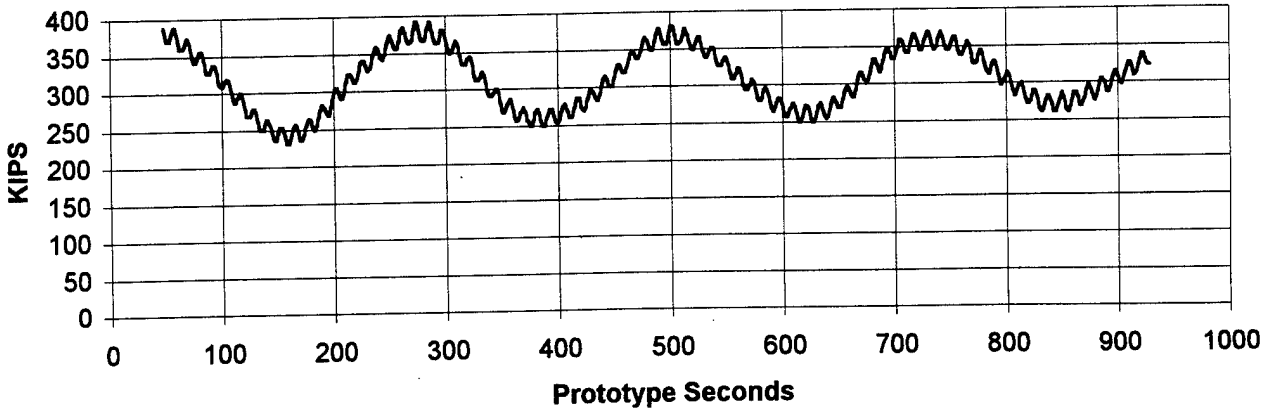



TEST A603 - PT HEAVE

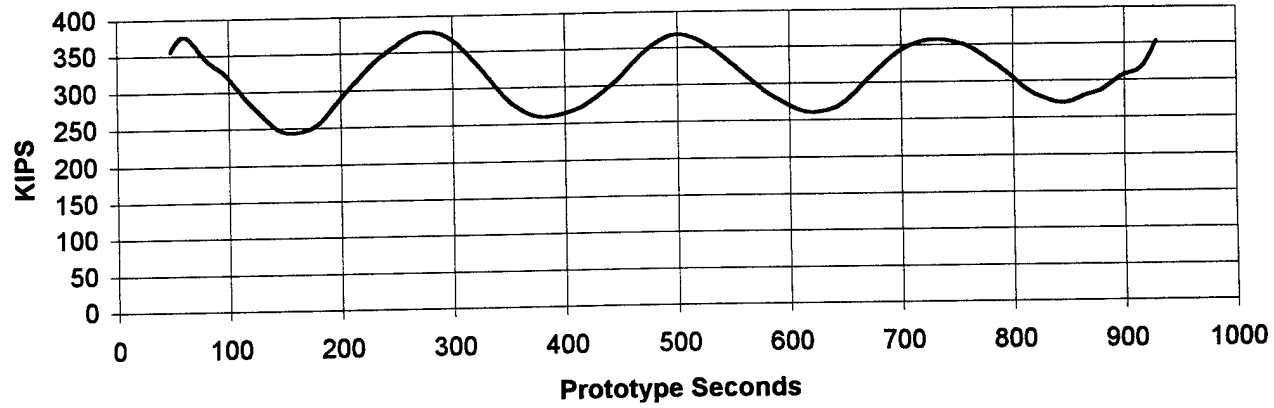


TEST A604 - ML_1 TENSION

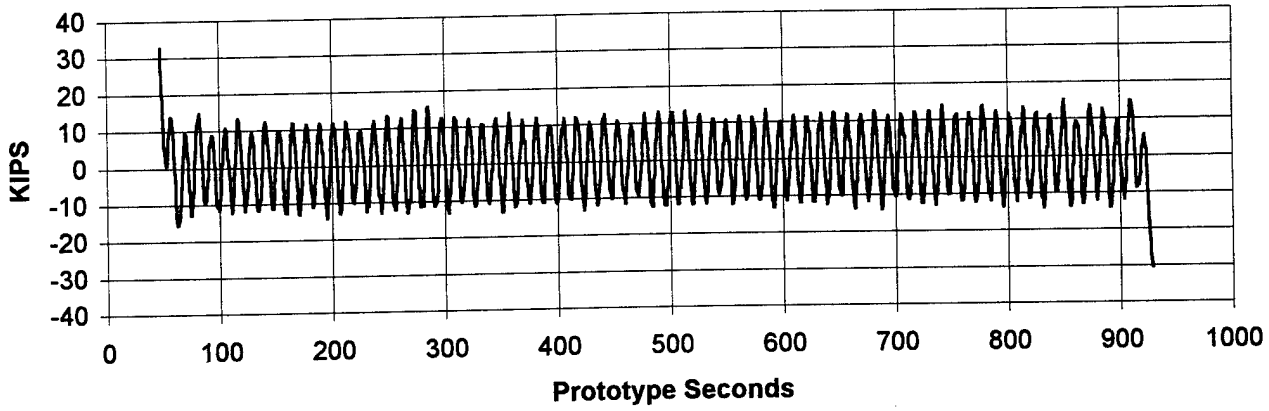
## Unfiltered Time History



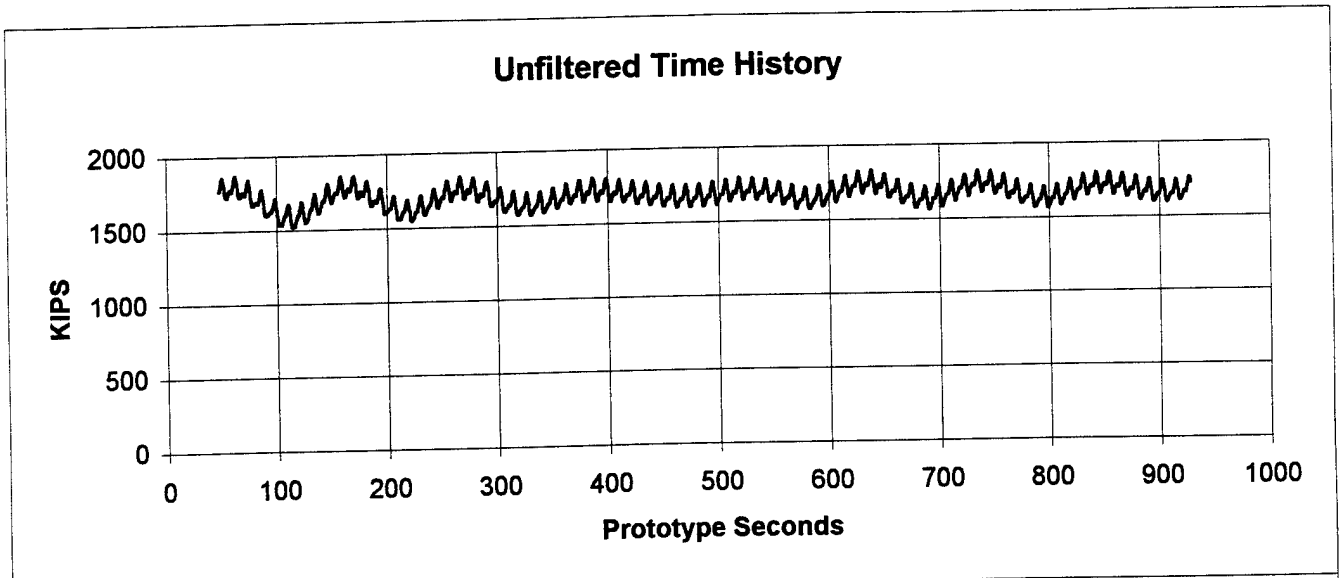

## Filtered Low Frequency Time History

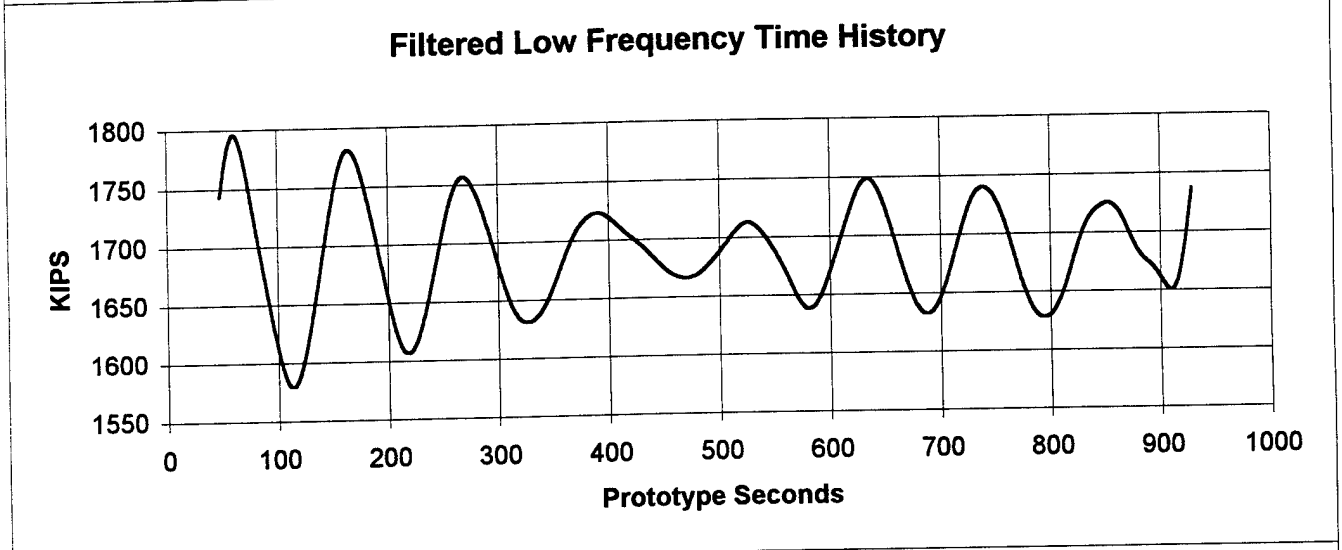


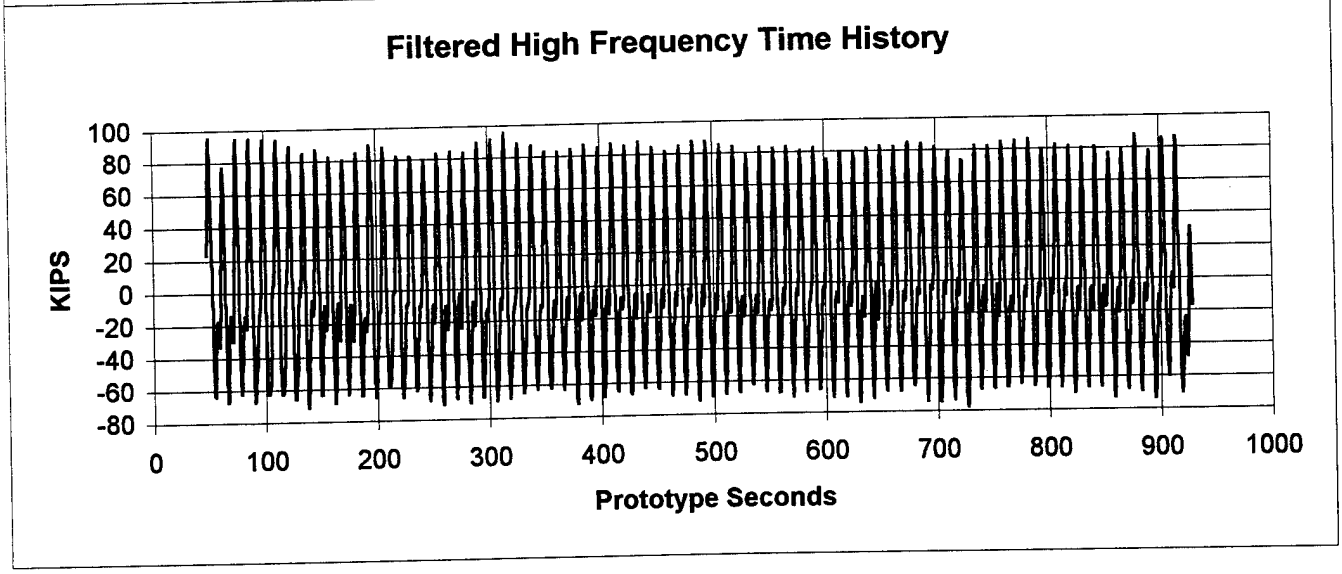

## Filtered High Frequency Time History



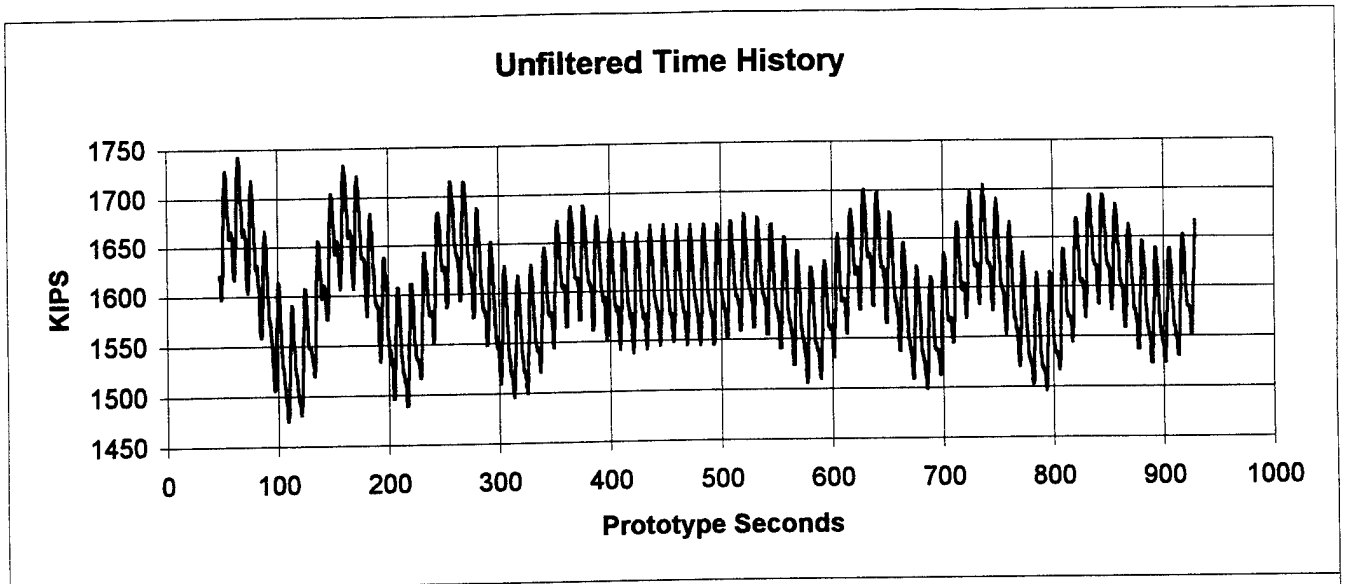
TEST A604 - BUOY 1 TENSION

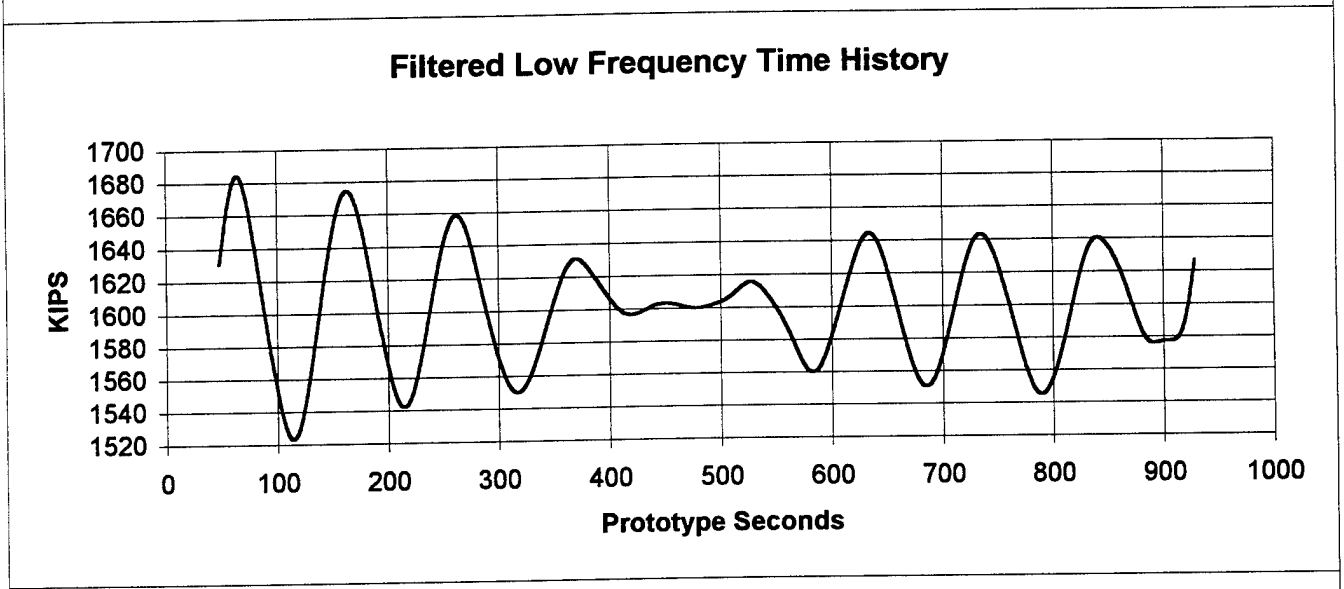


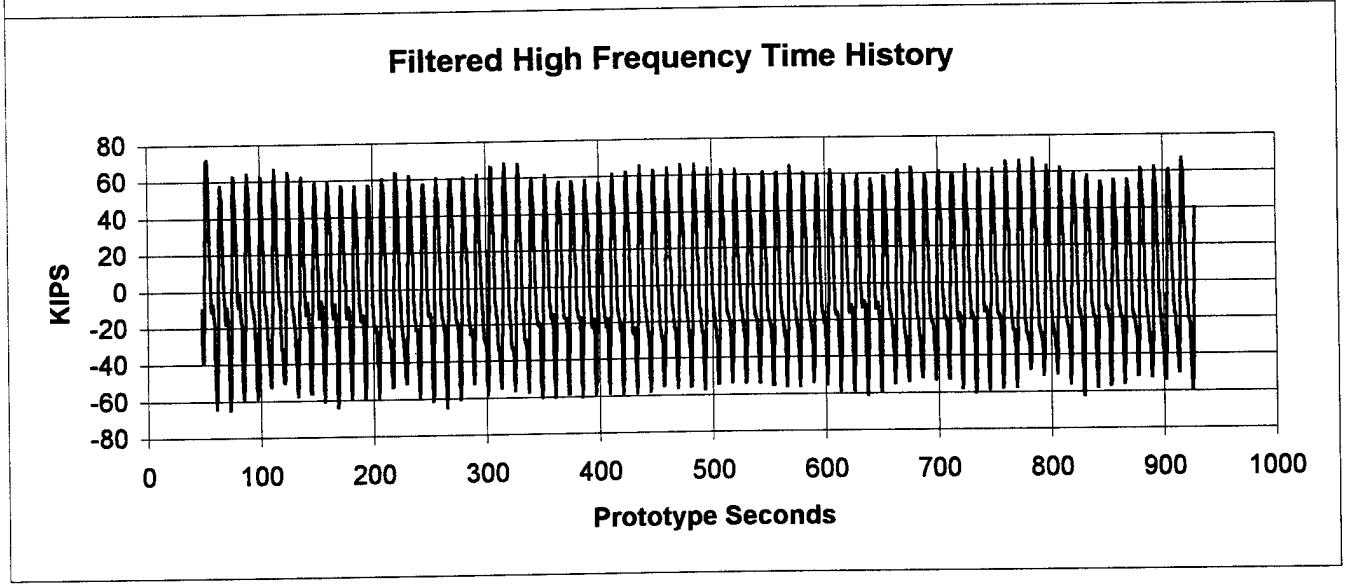



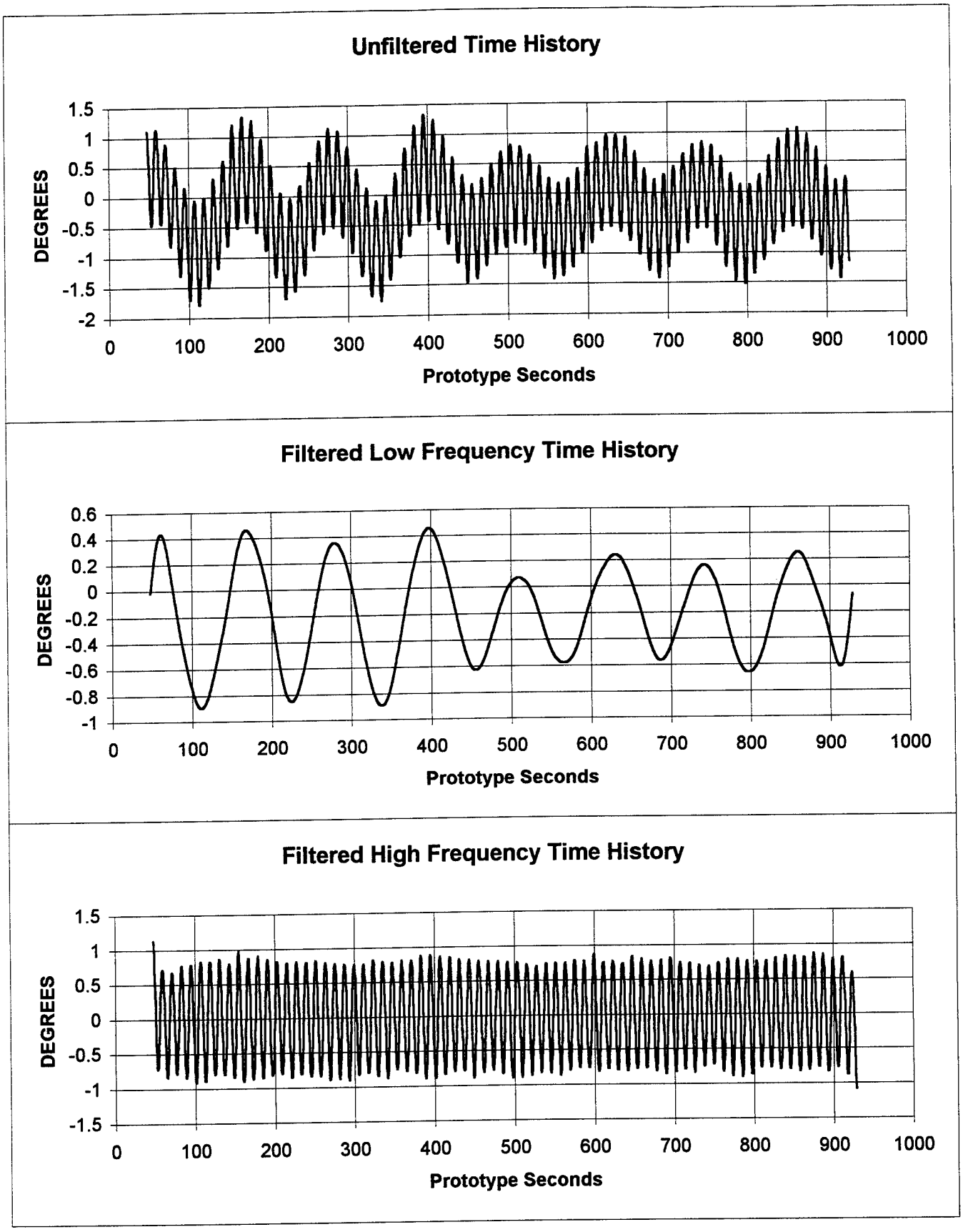
TEST A604 - BUOY 2 TENSION



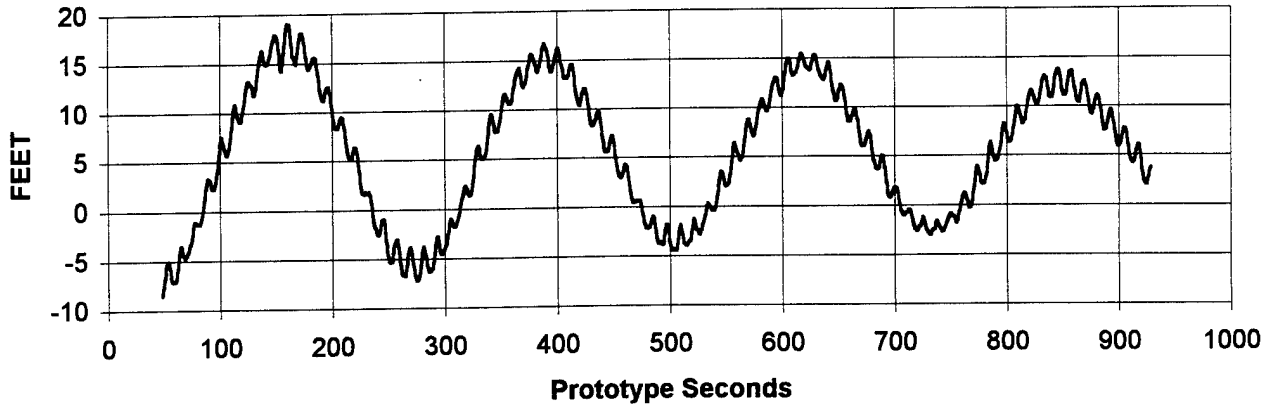



TEST A604 - PITCH

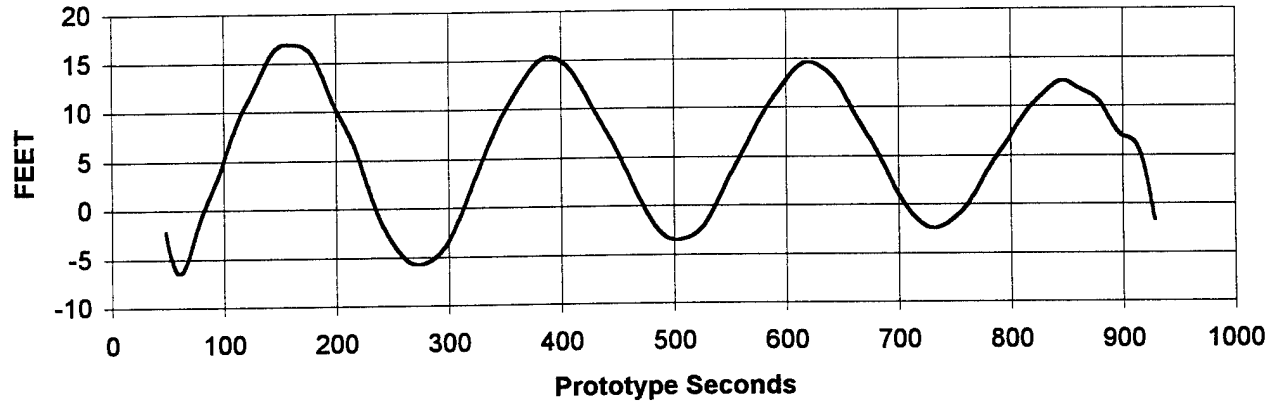


TEST A604 - PT SURGE

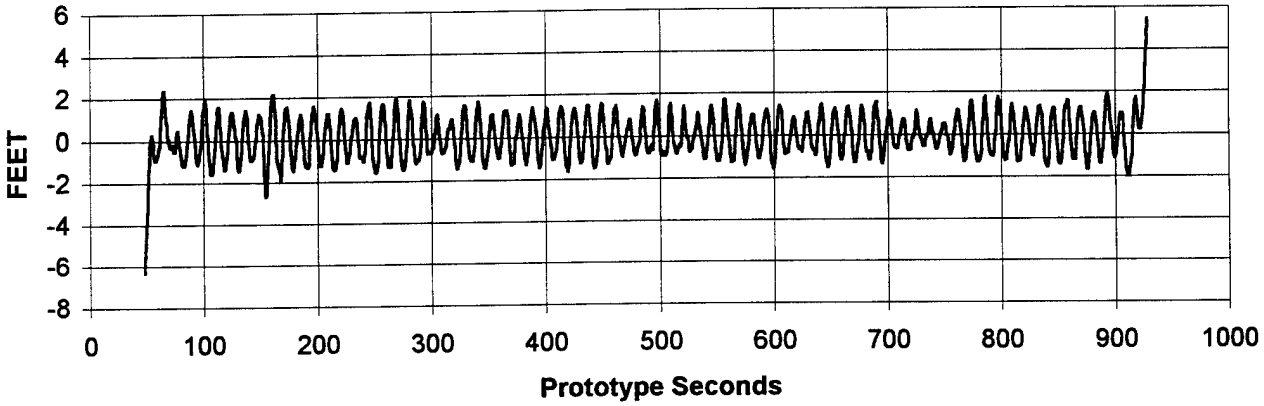
## Unfiltered Time History




## Filtered Low Frequency Time History

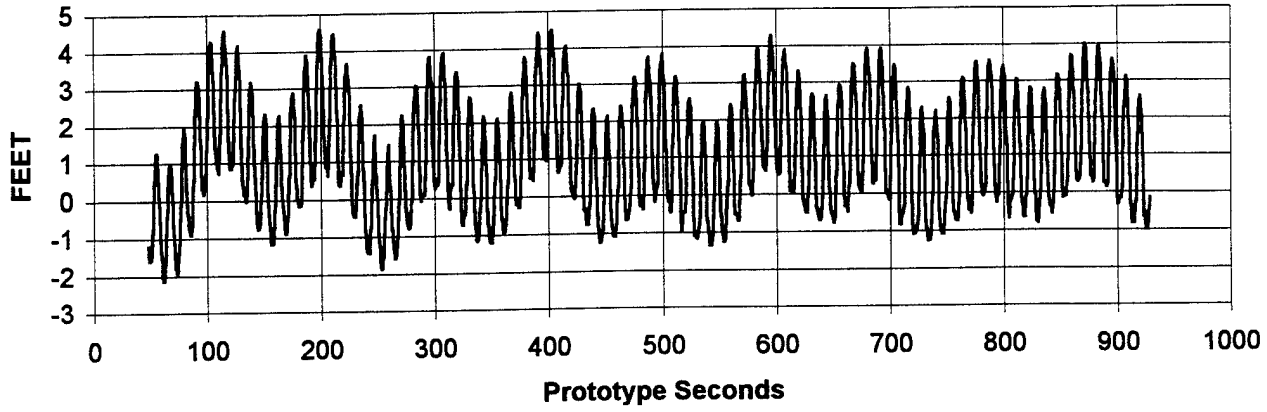



## Filtered High Frequency Time History

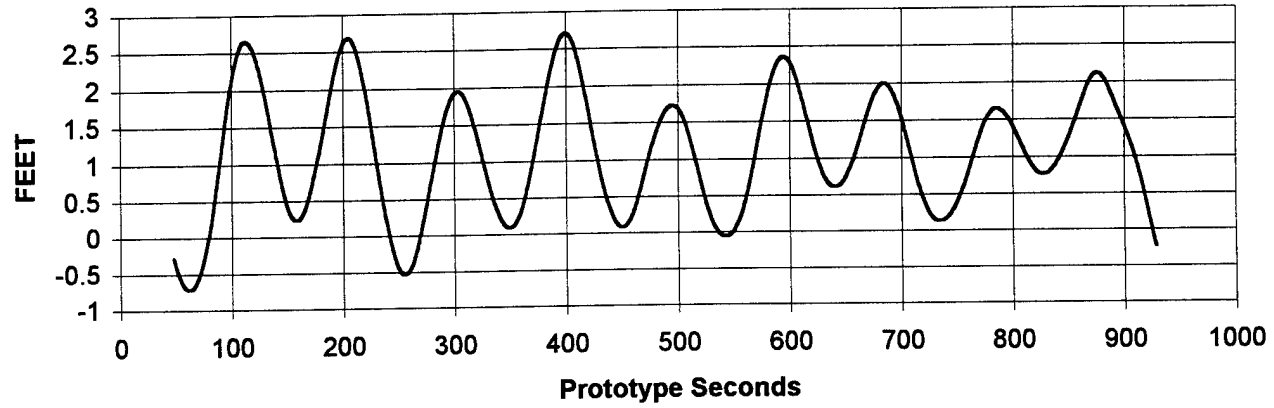


TEST A604 - PT HEAVE

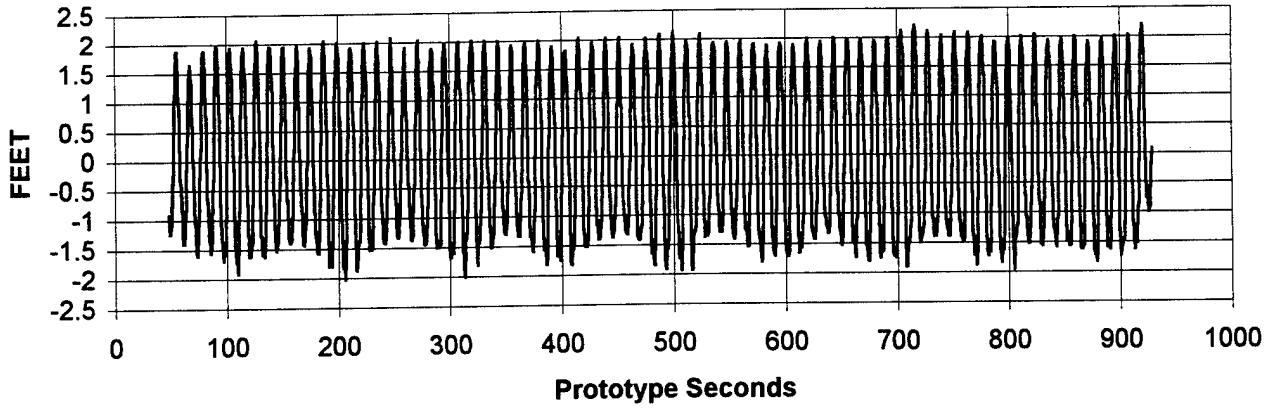
## Unfiltered Time History



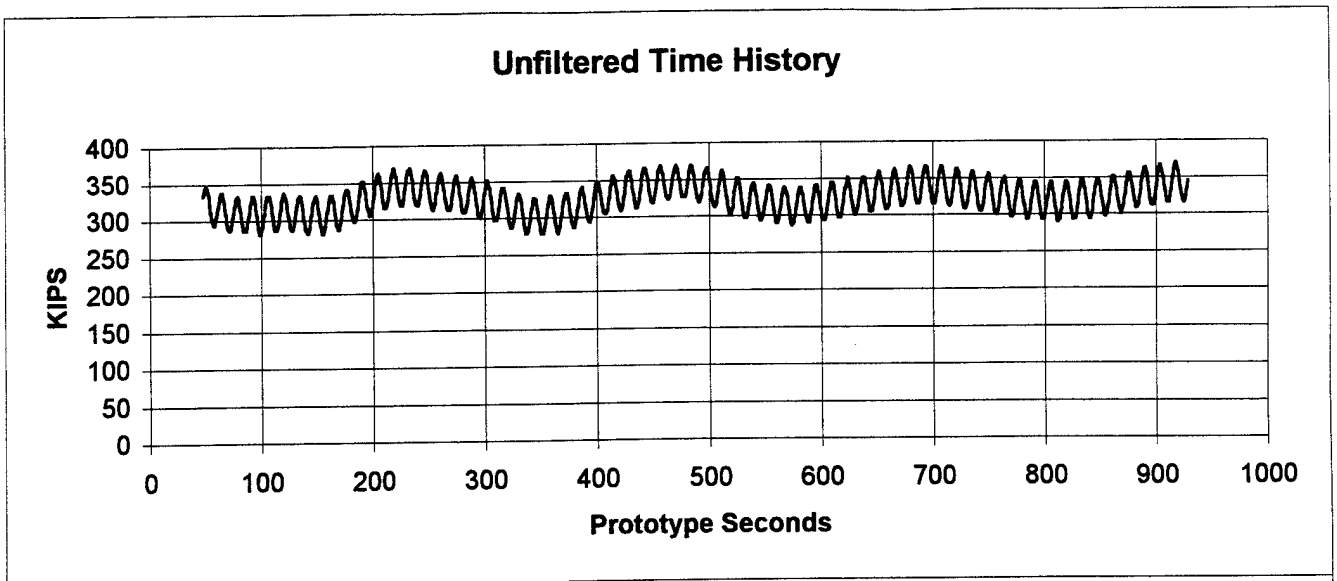

## Filtered Low Frequency Time History

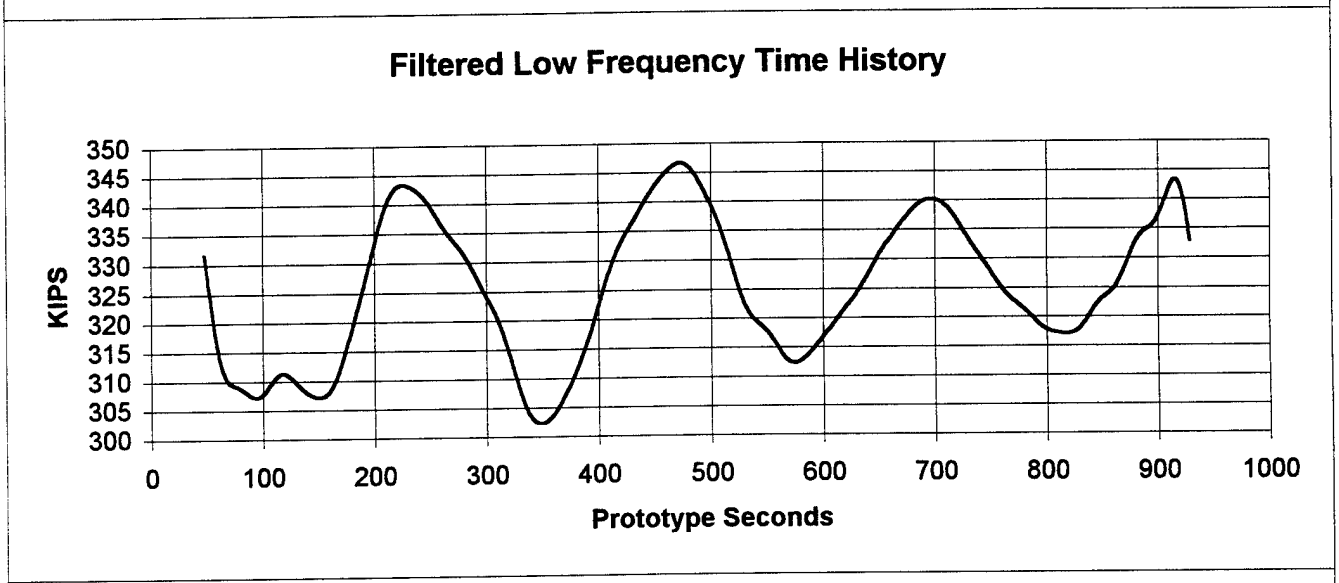


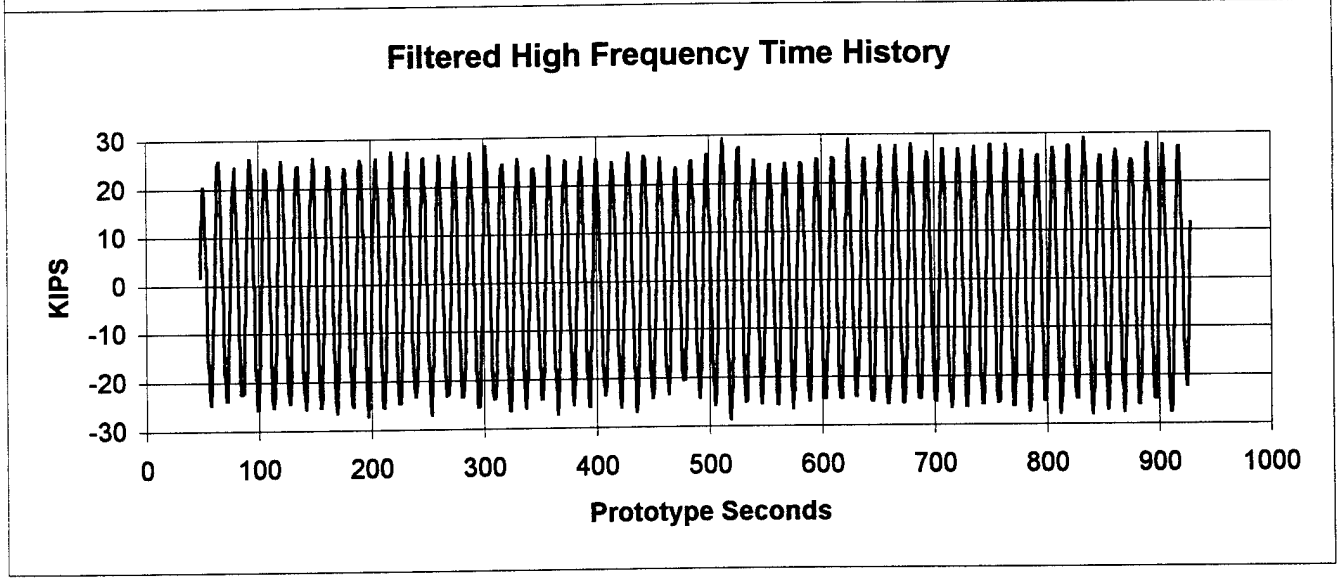

## Filtered High Frequency Time History



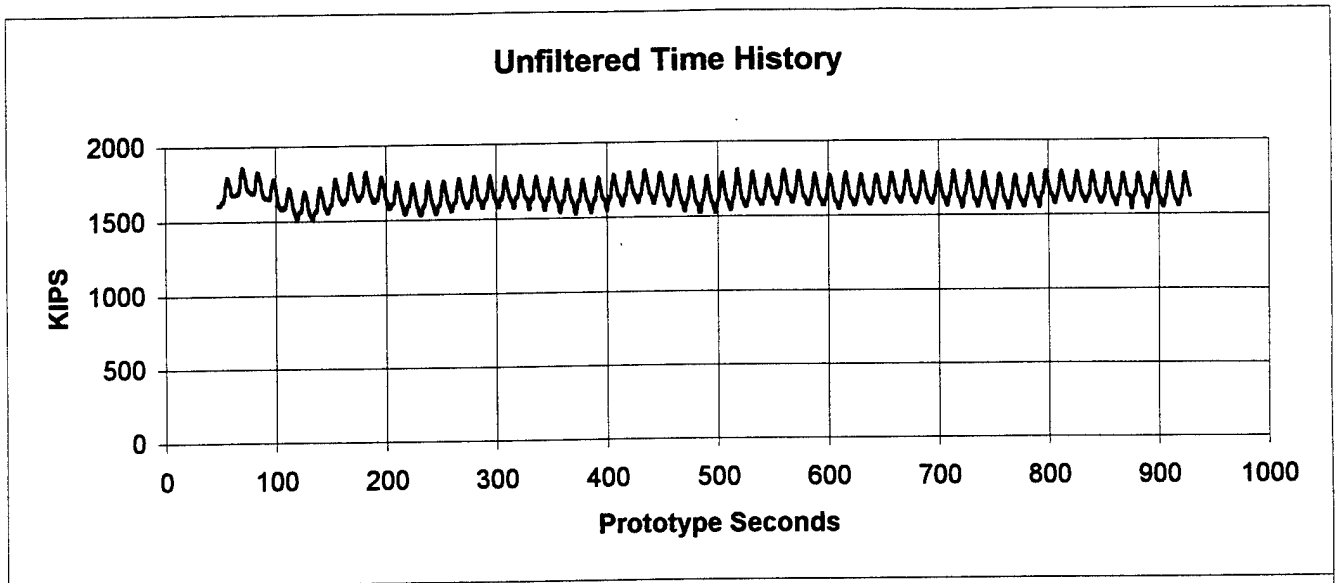
TEST A605 - ML_1 TENSION

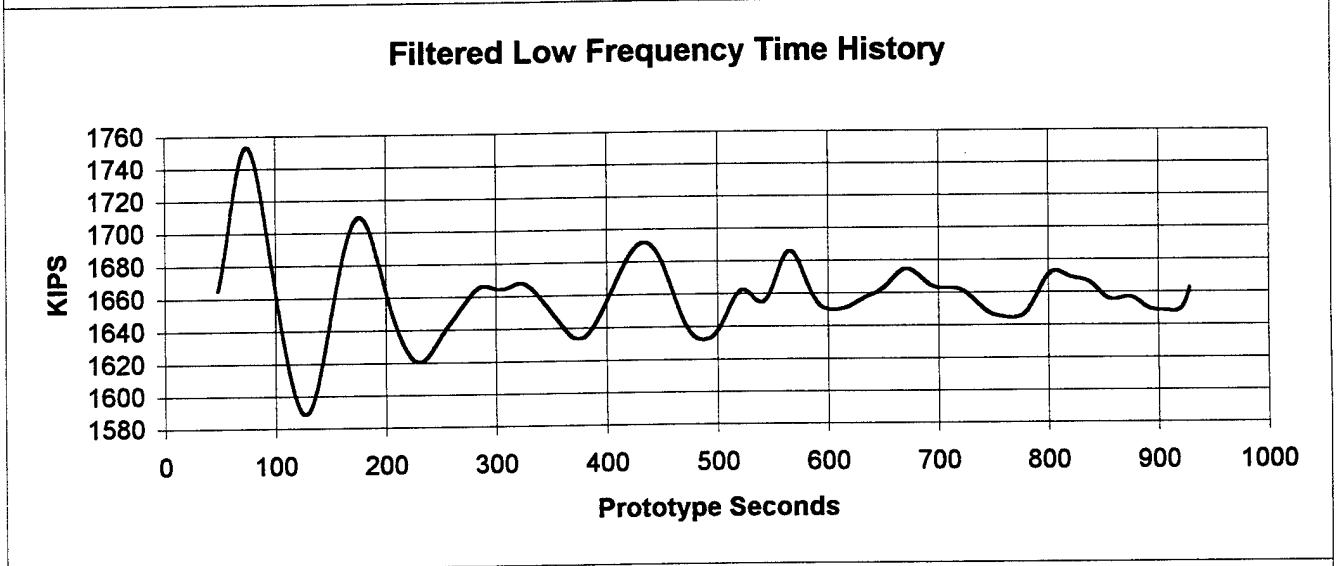


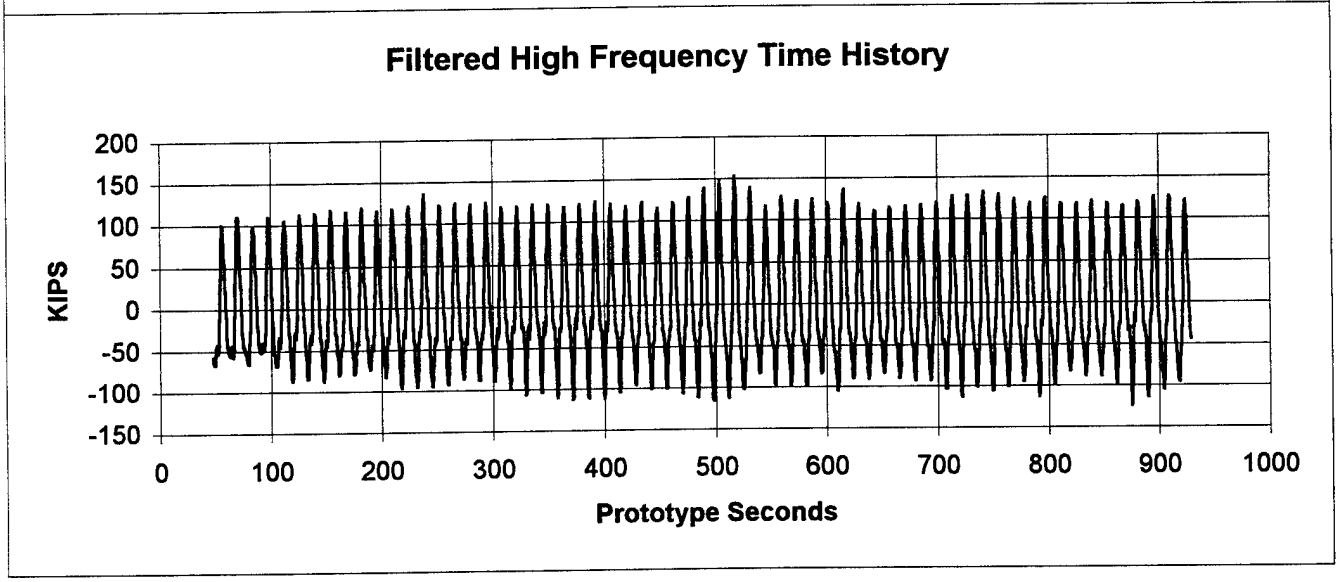



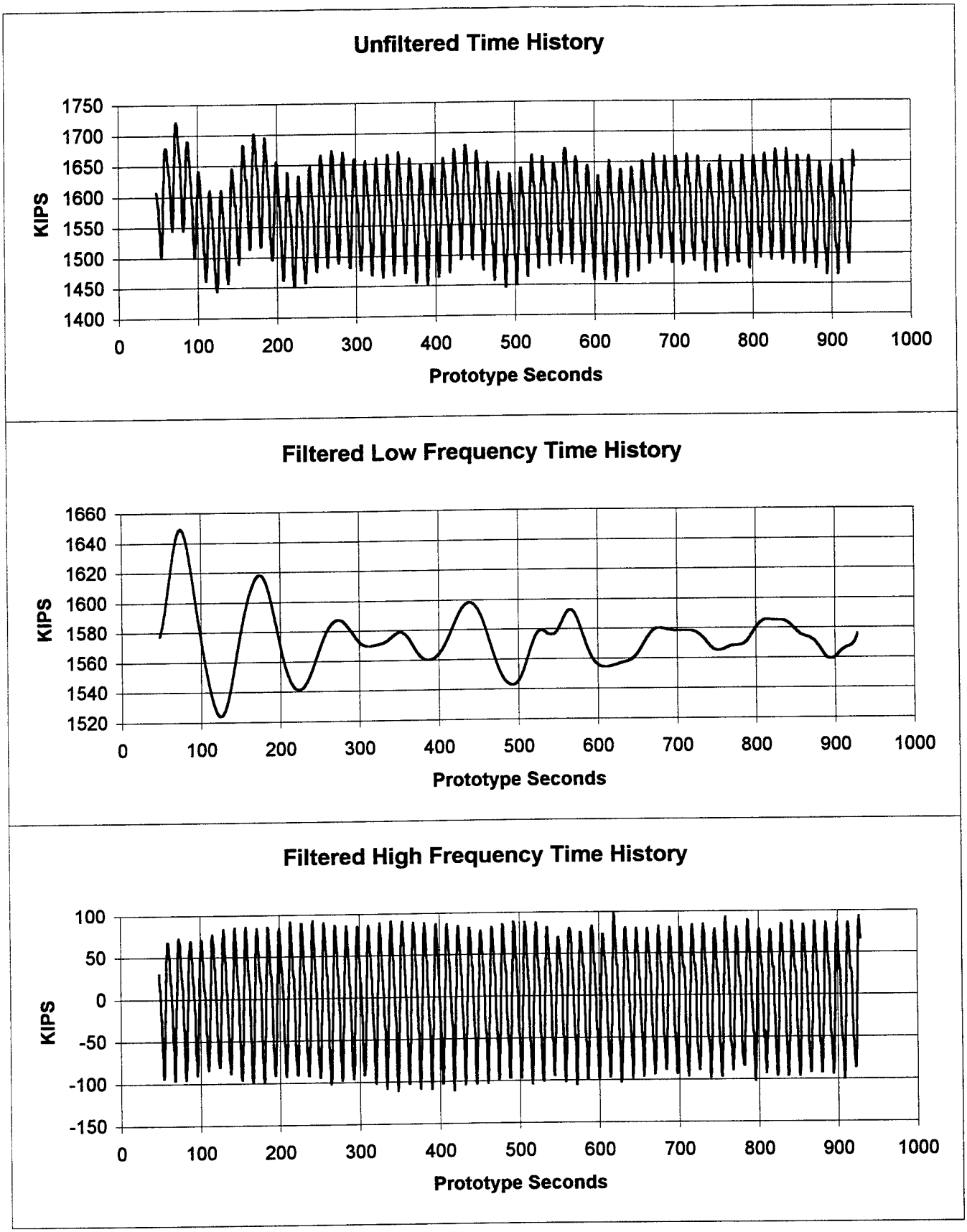
TEST A605 - BUOY 1 TENSION



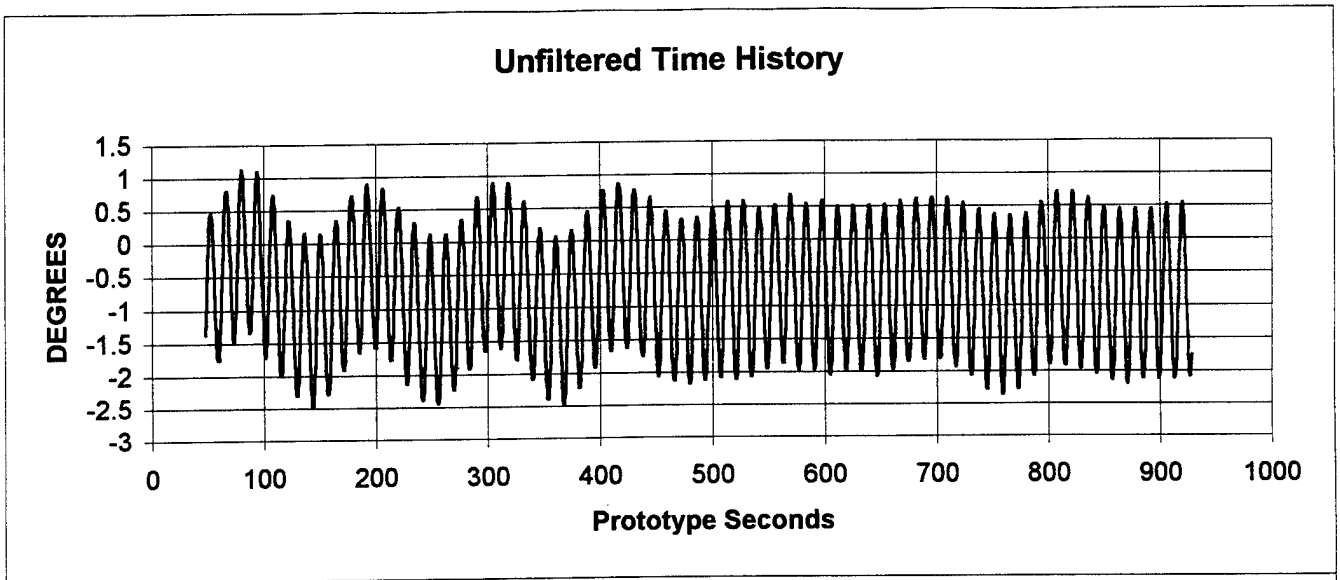



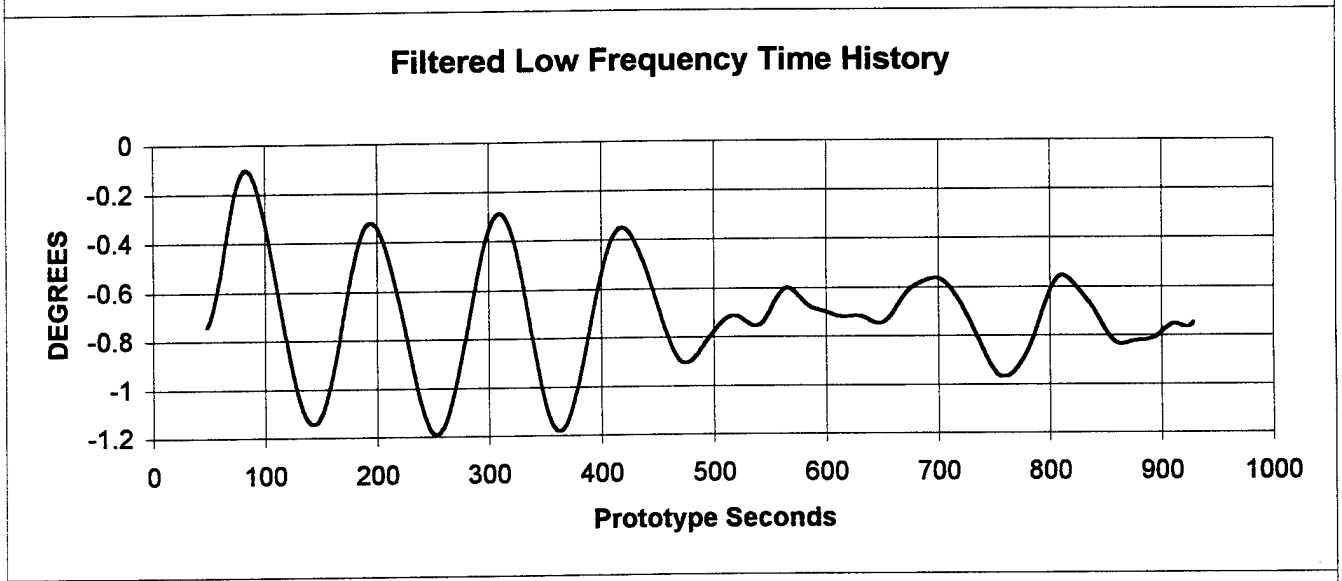



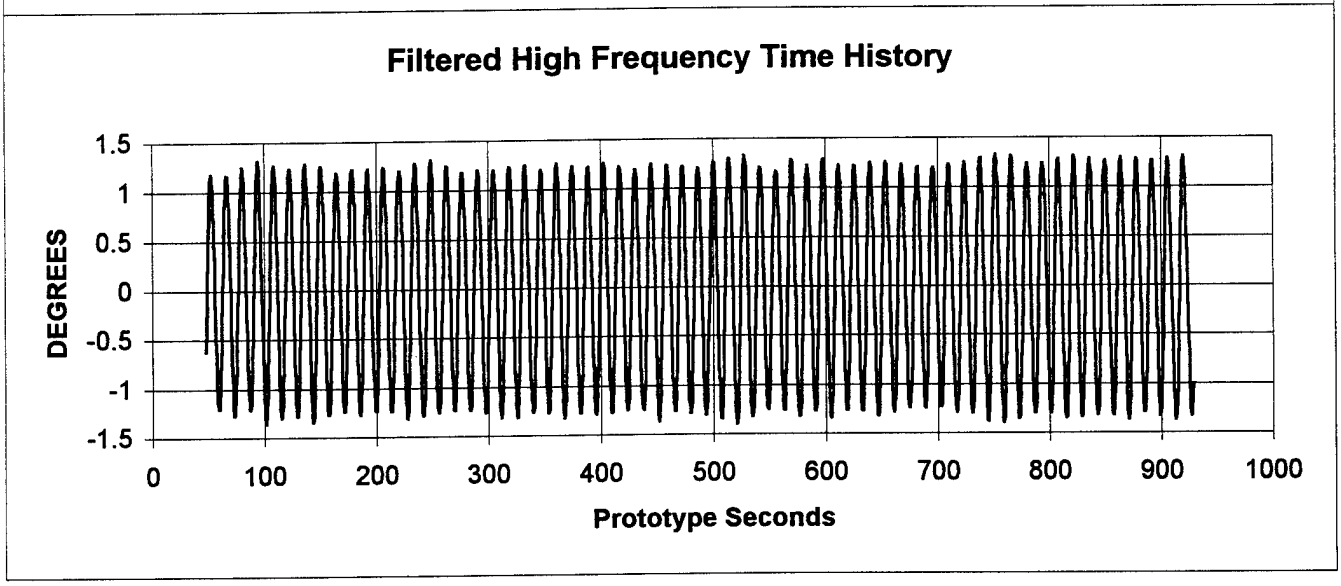
TEST A605 - BUOY 2 TENSION



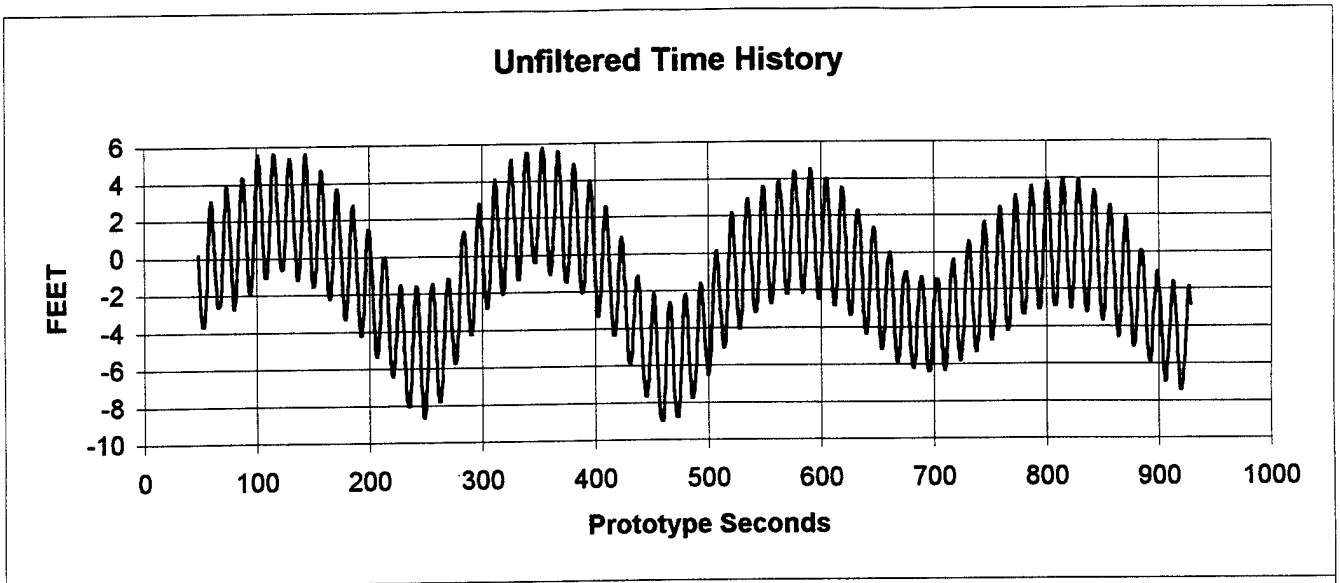
TEST A605 - PITCH

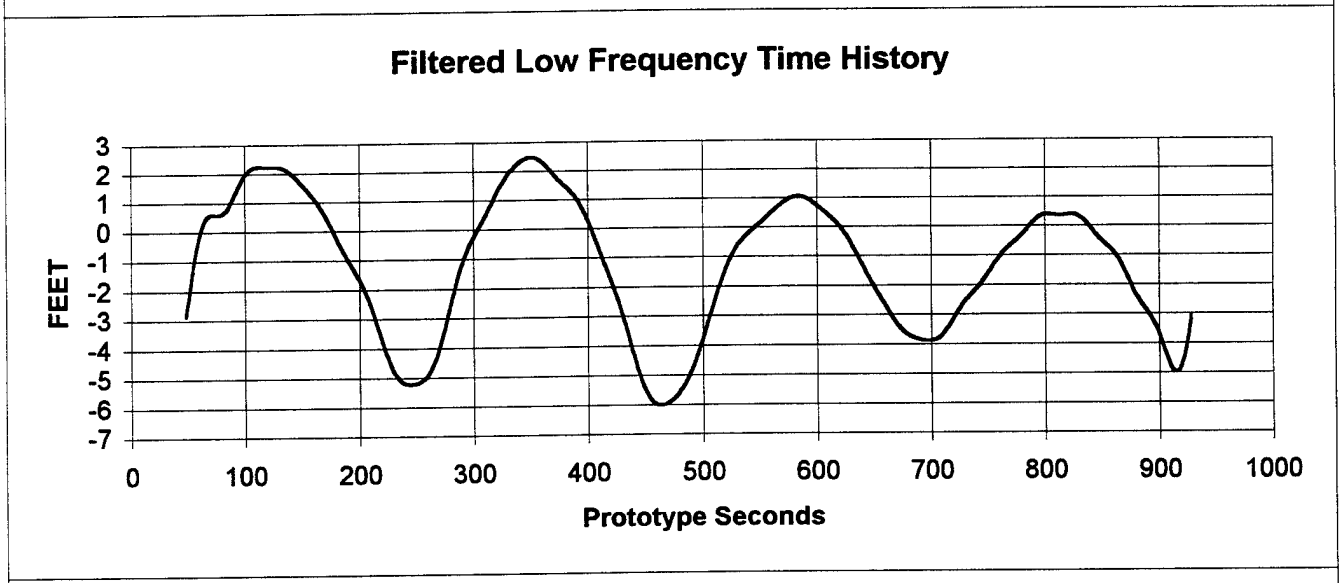


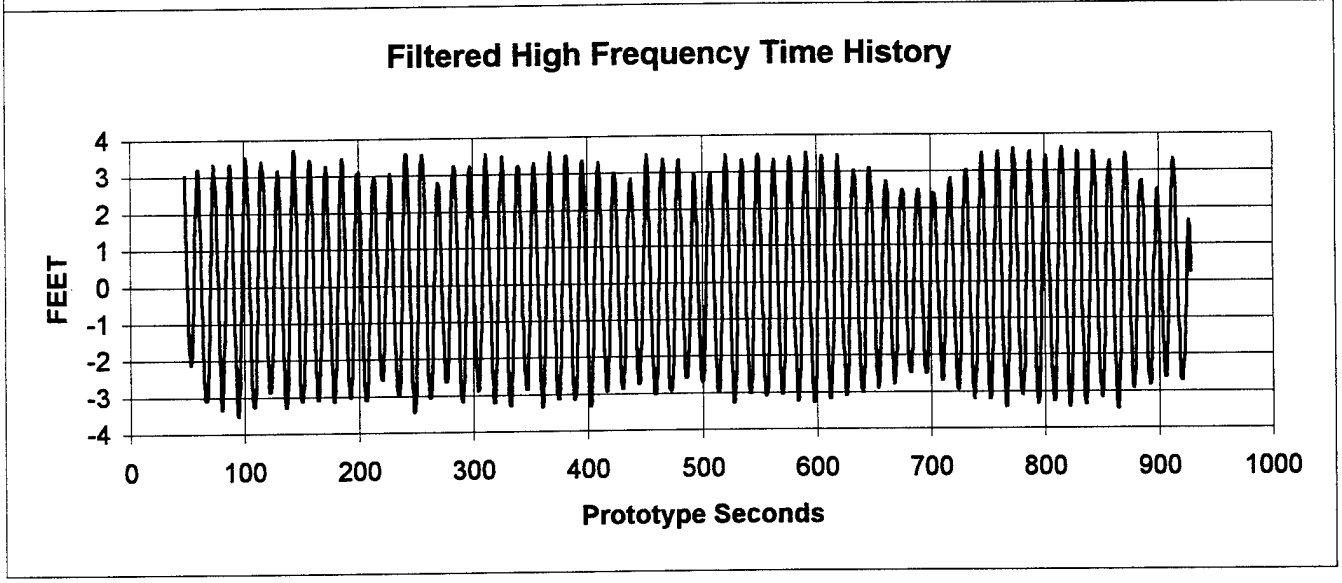



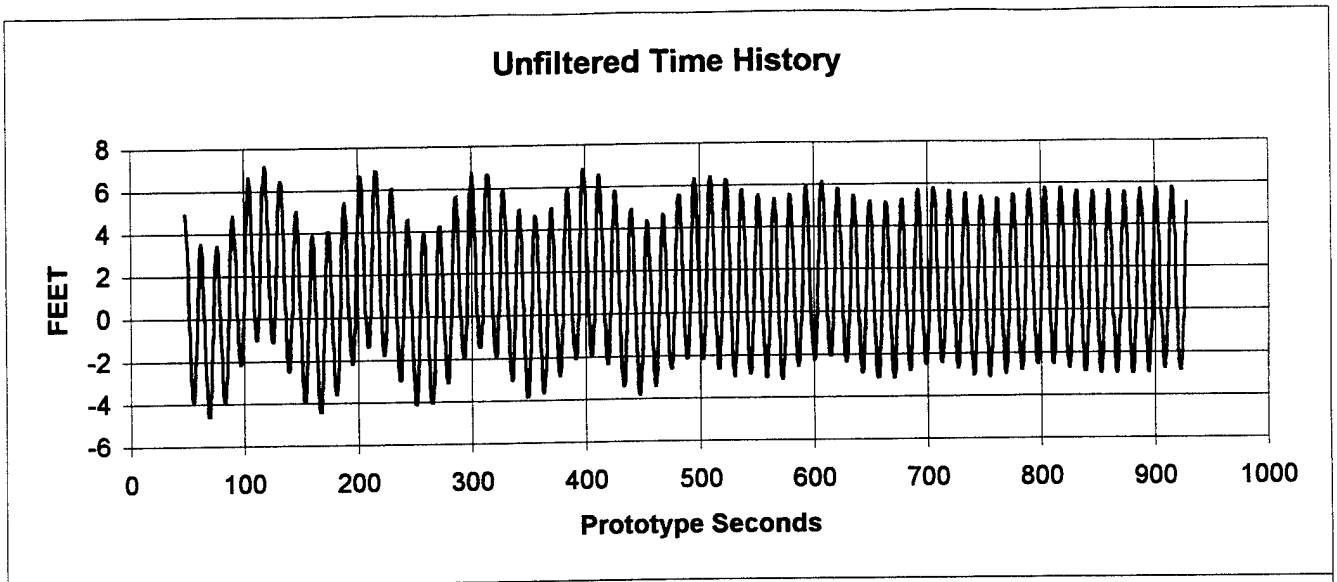
TEST A605 - PT SURGE

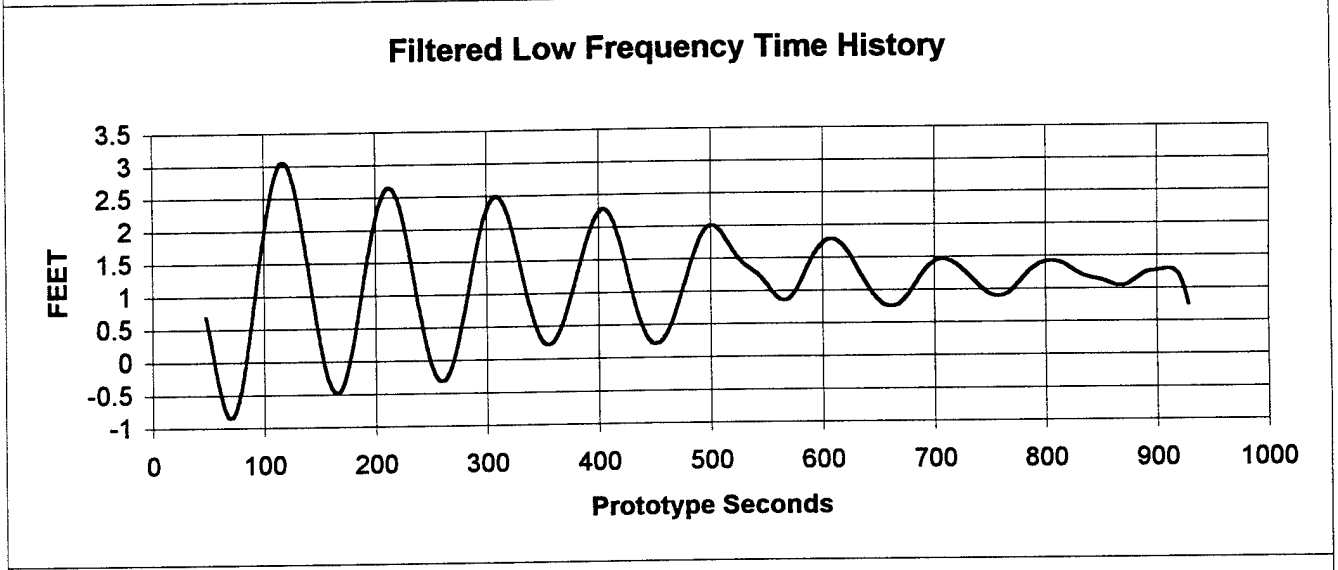


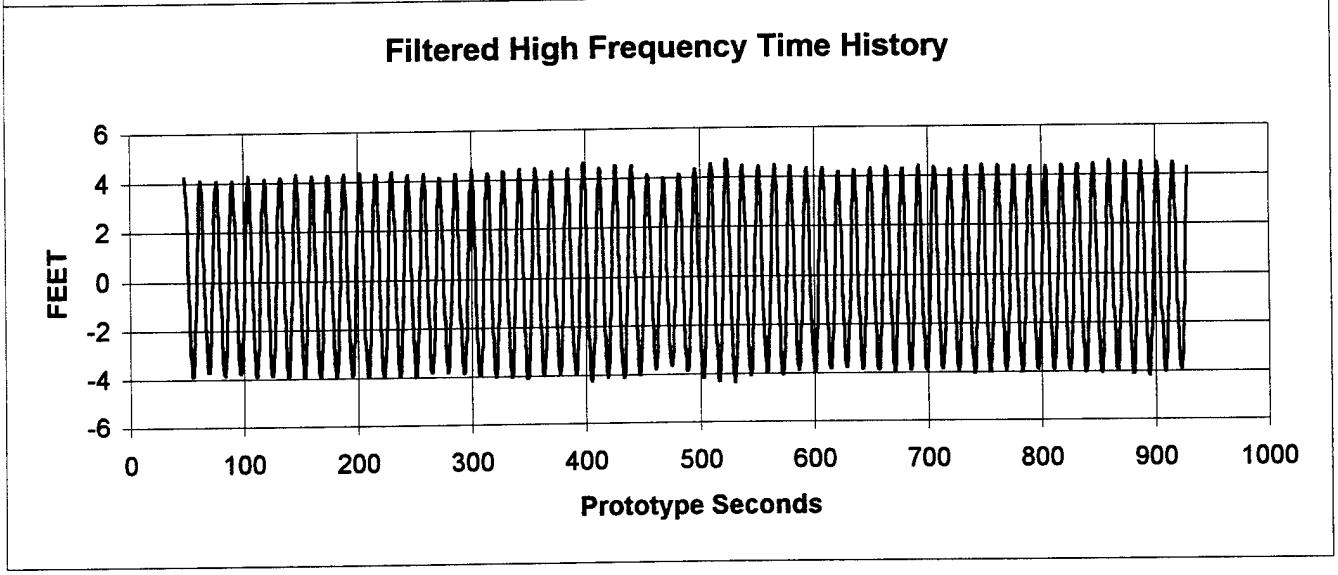



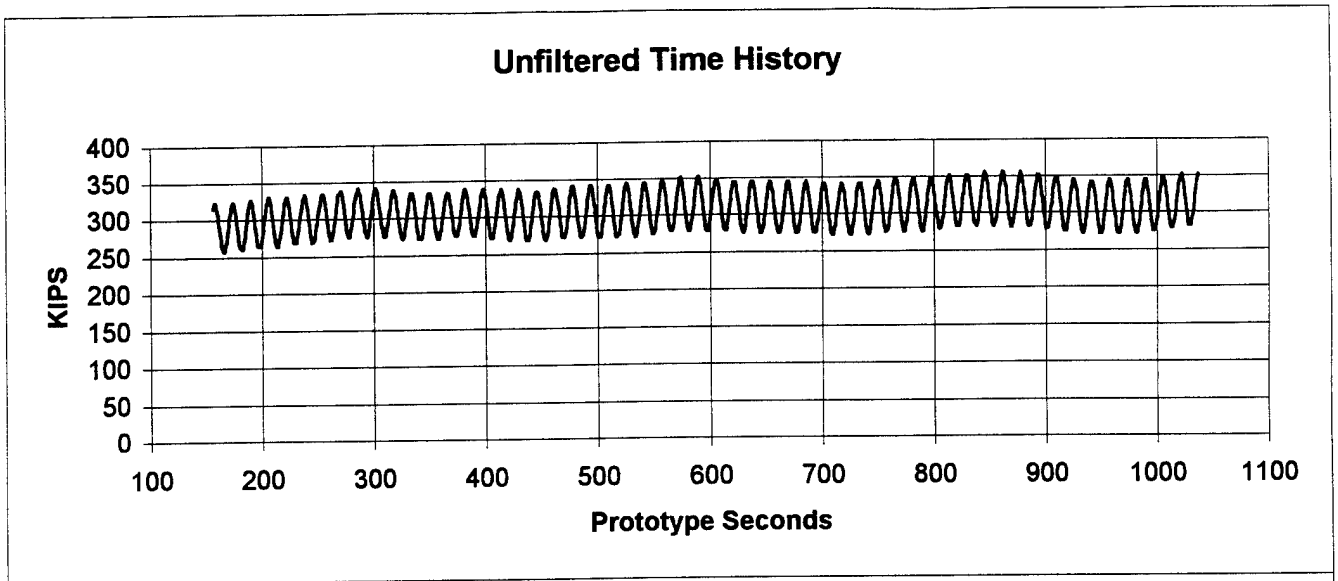
TEST A605 - PT HEAVE

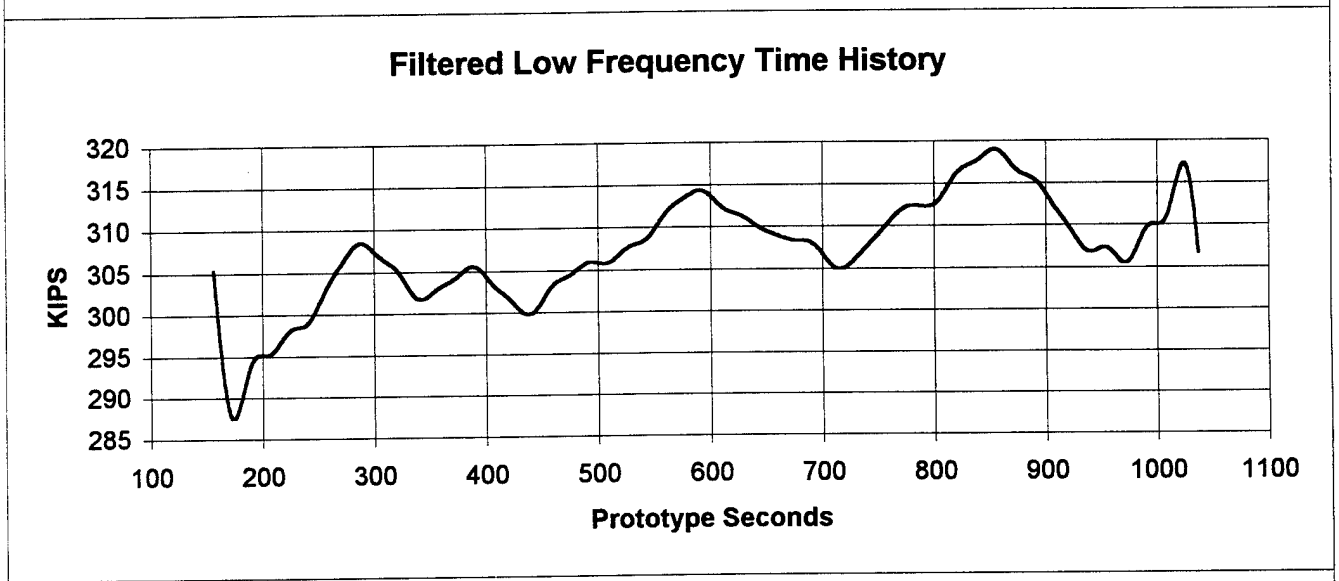


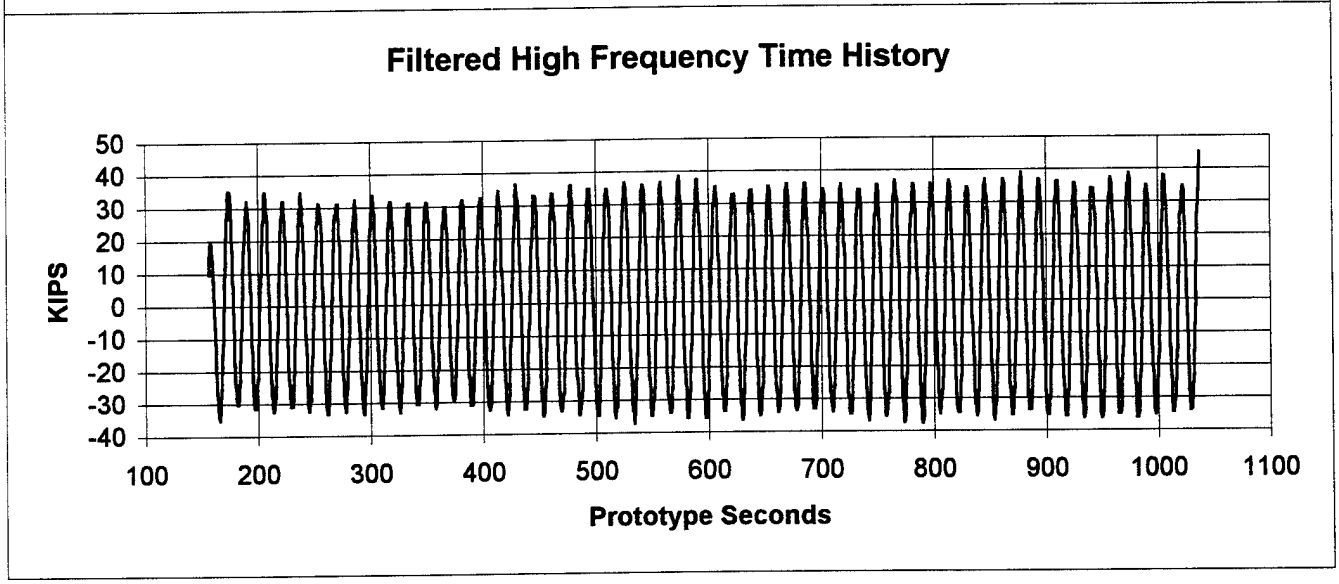



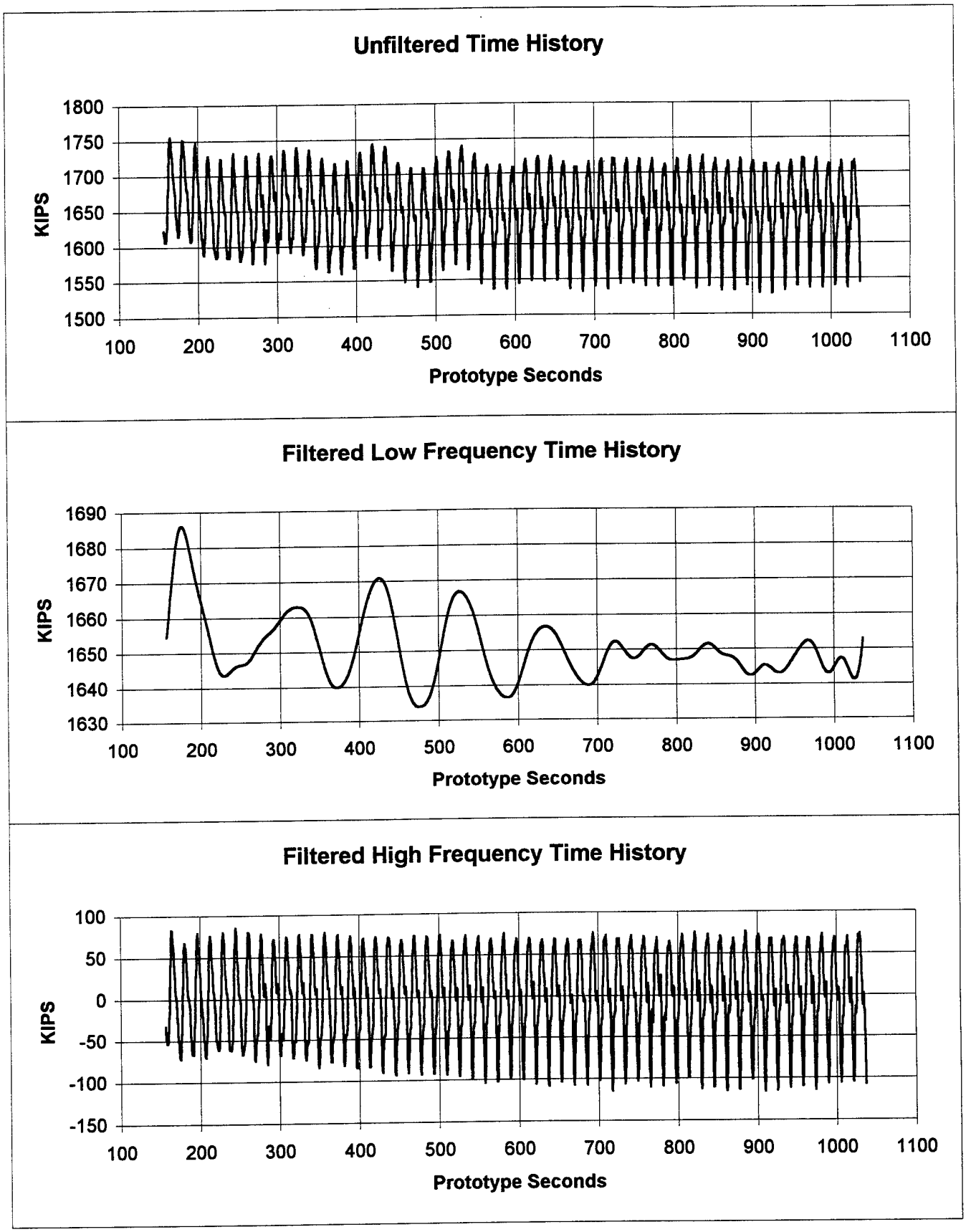
TEST A606 - ML_1 TENSION



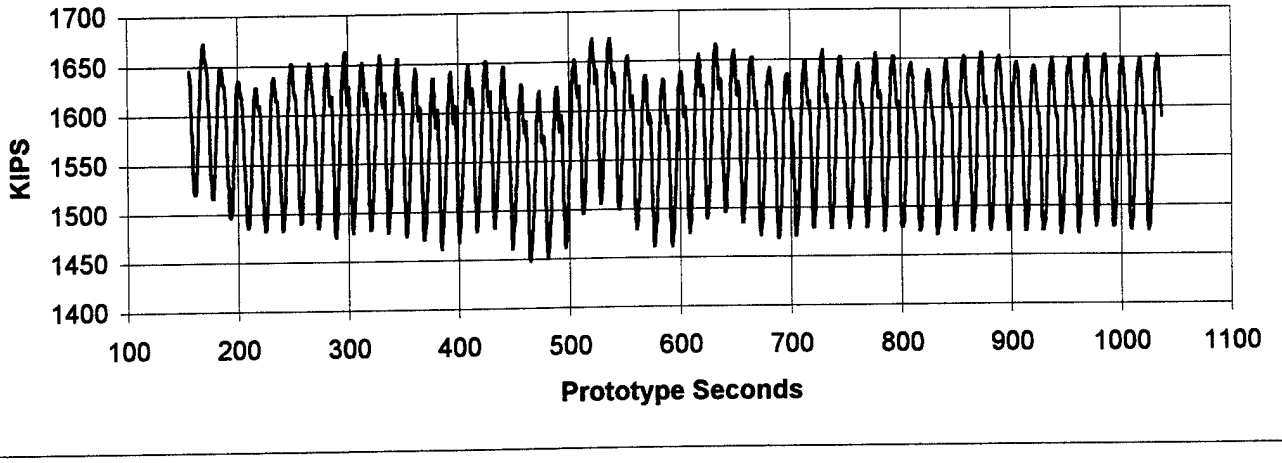



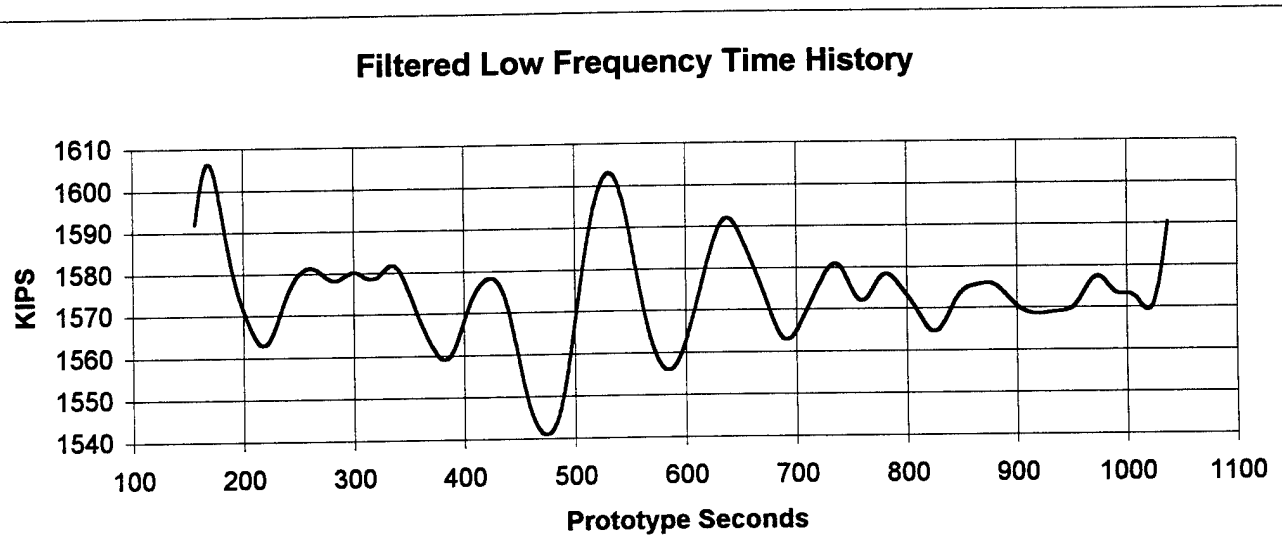



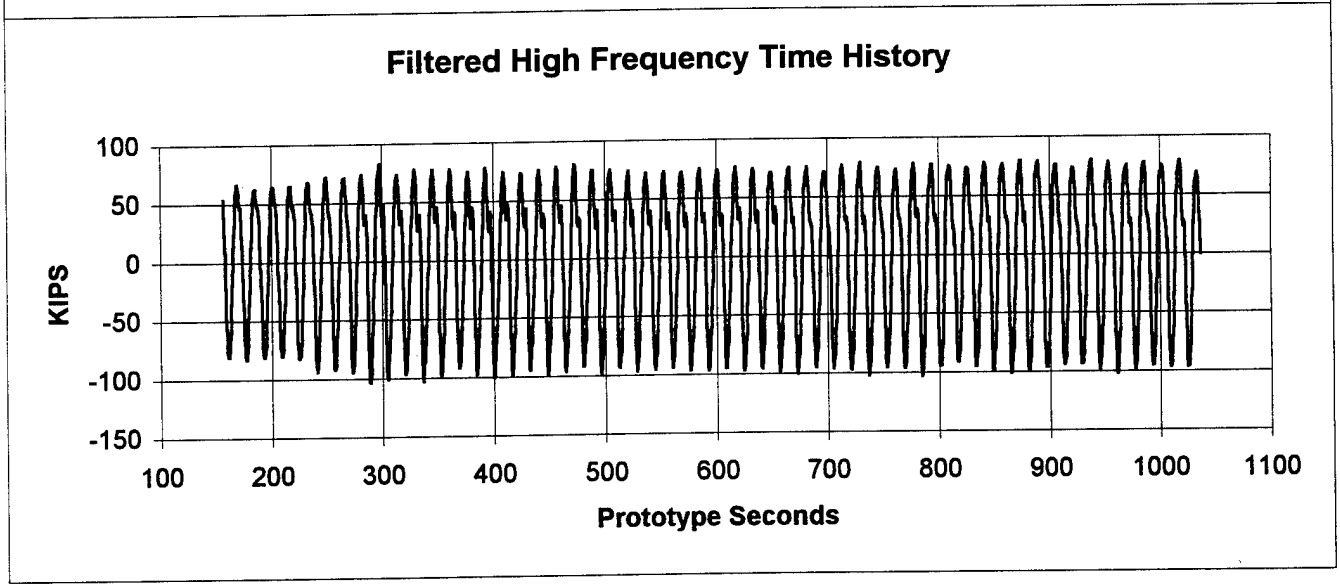
TEST A606 - BUOY 1 TENSION



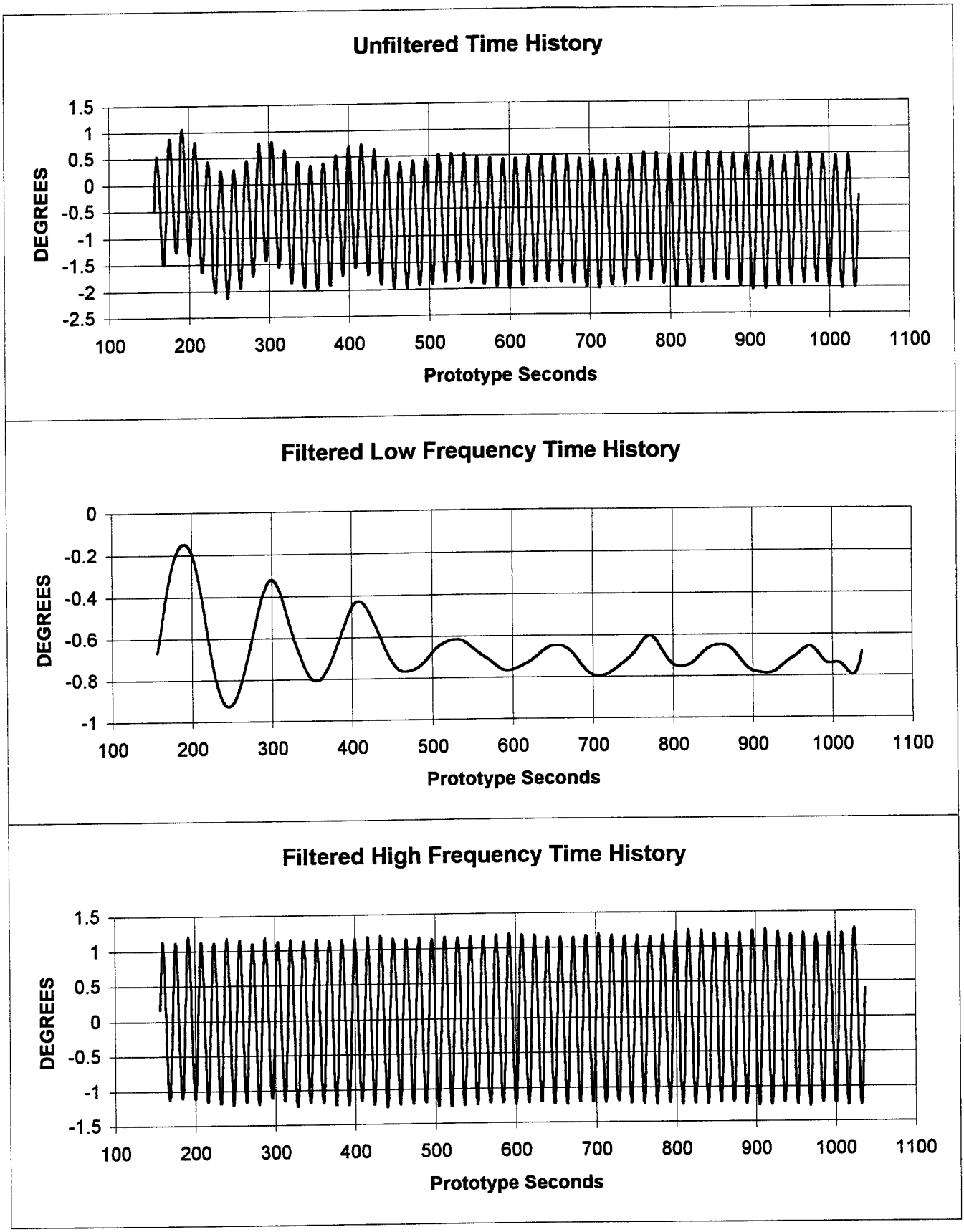
TEST A606 - BUOY 2 TENSION



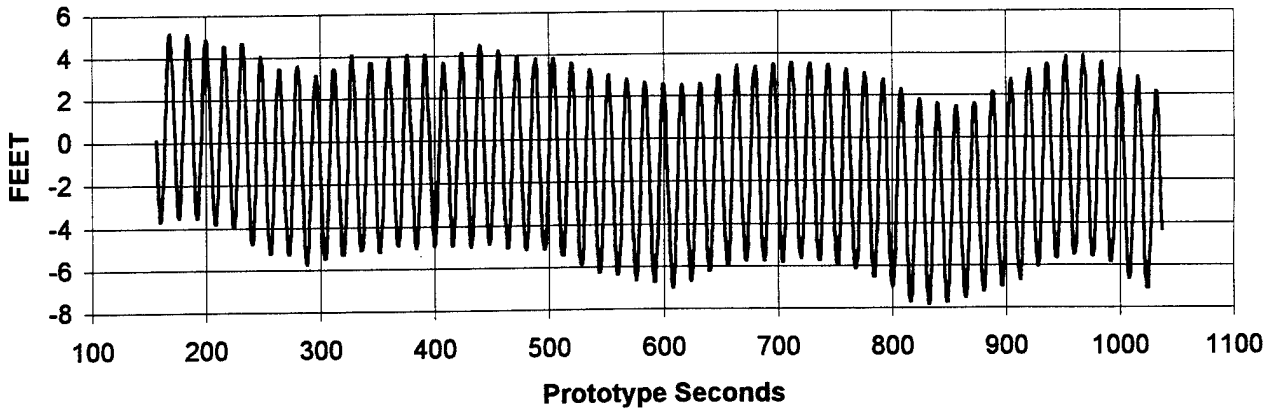



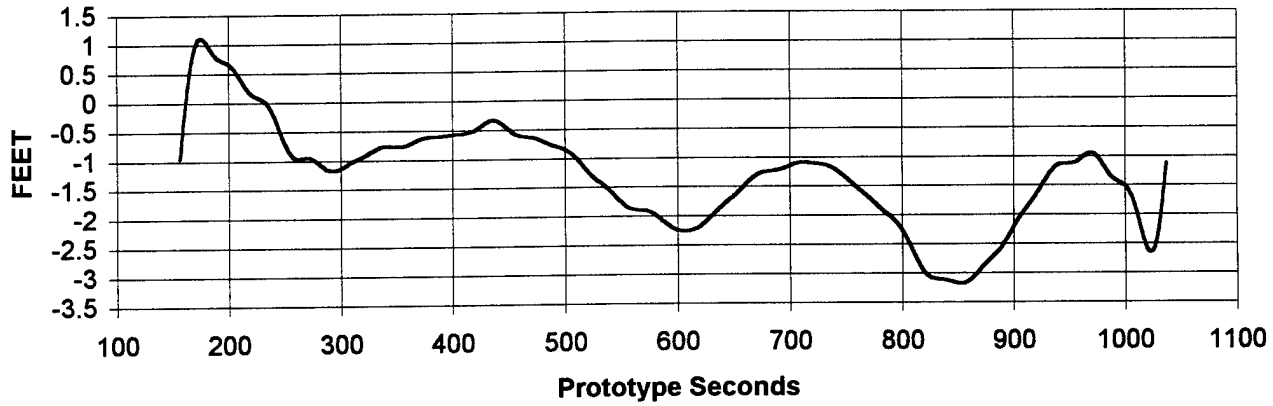
TEST A606 - PITCH



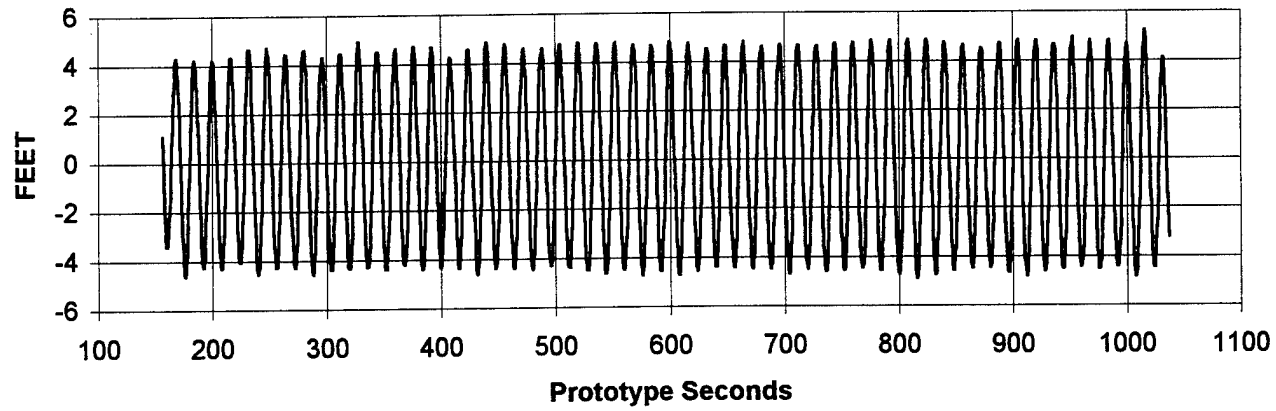
## Unfiltered Time History



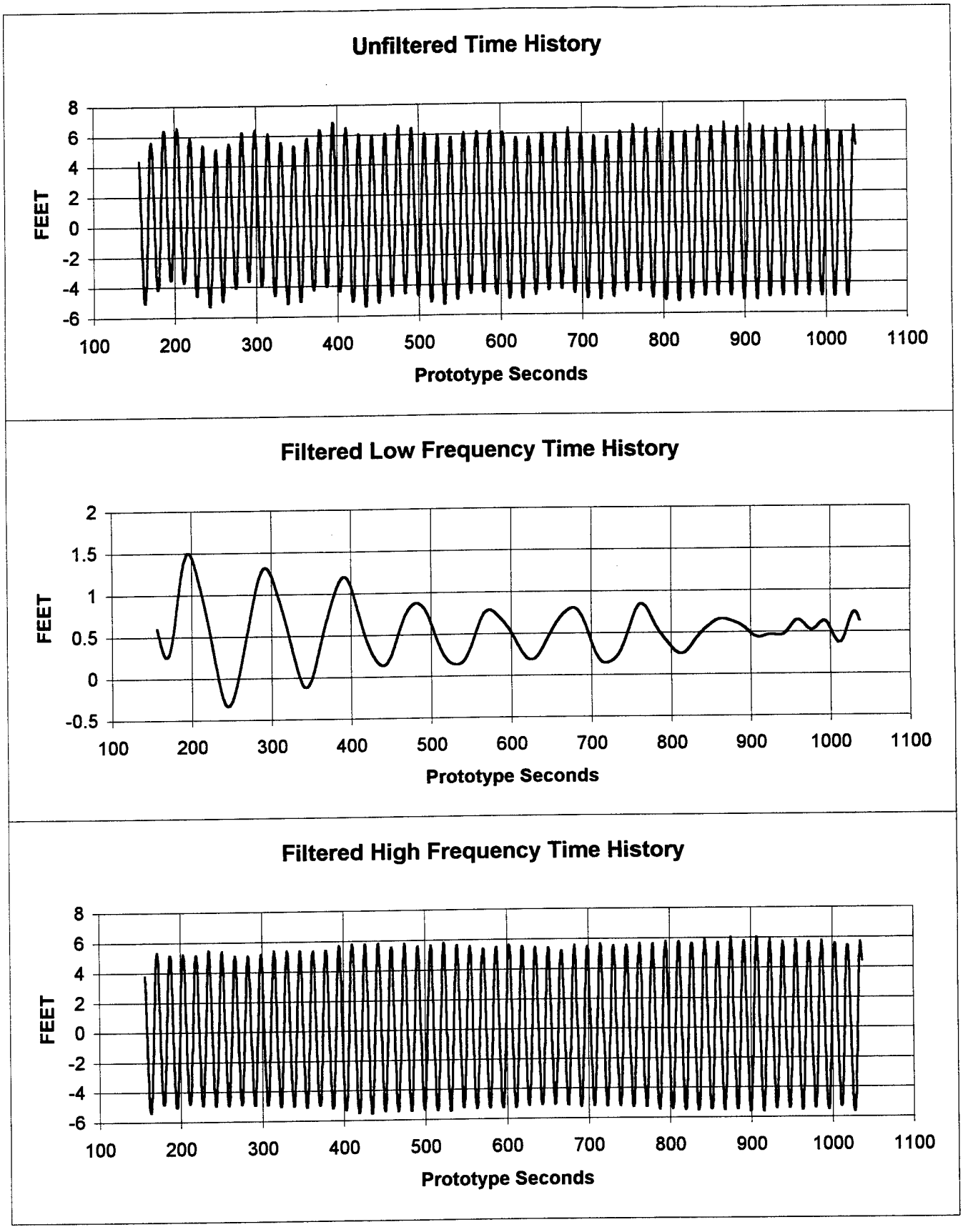

## Filtered Low Frequency Time History



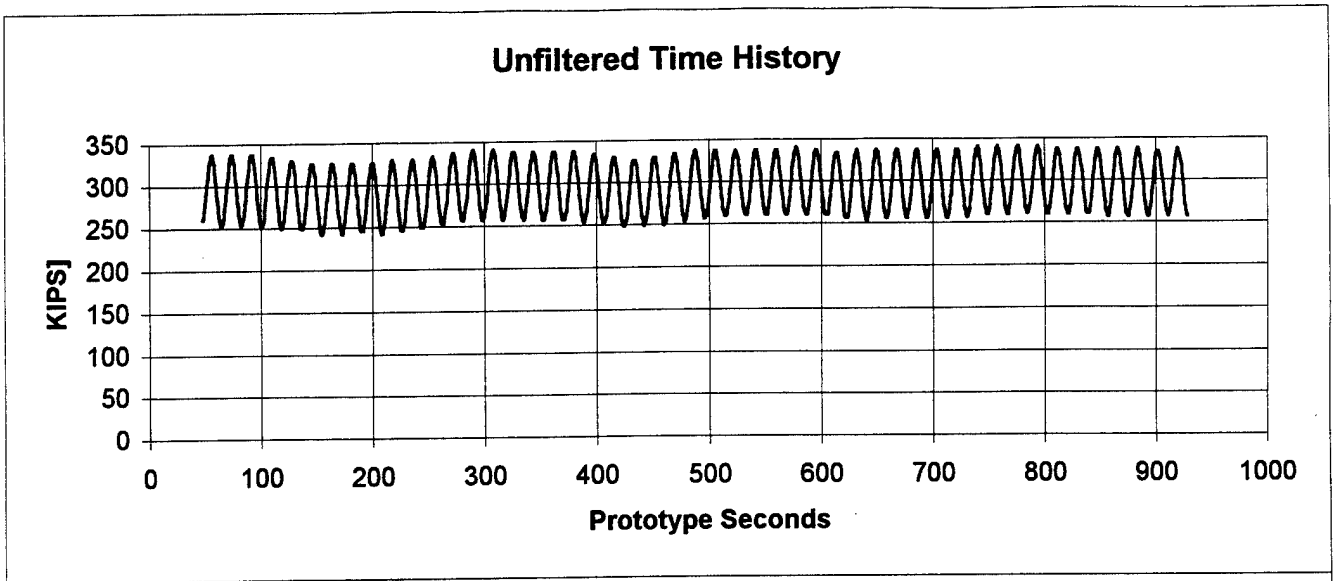

## Filtered High Frequency Time History

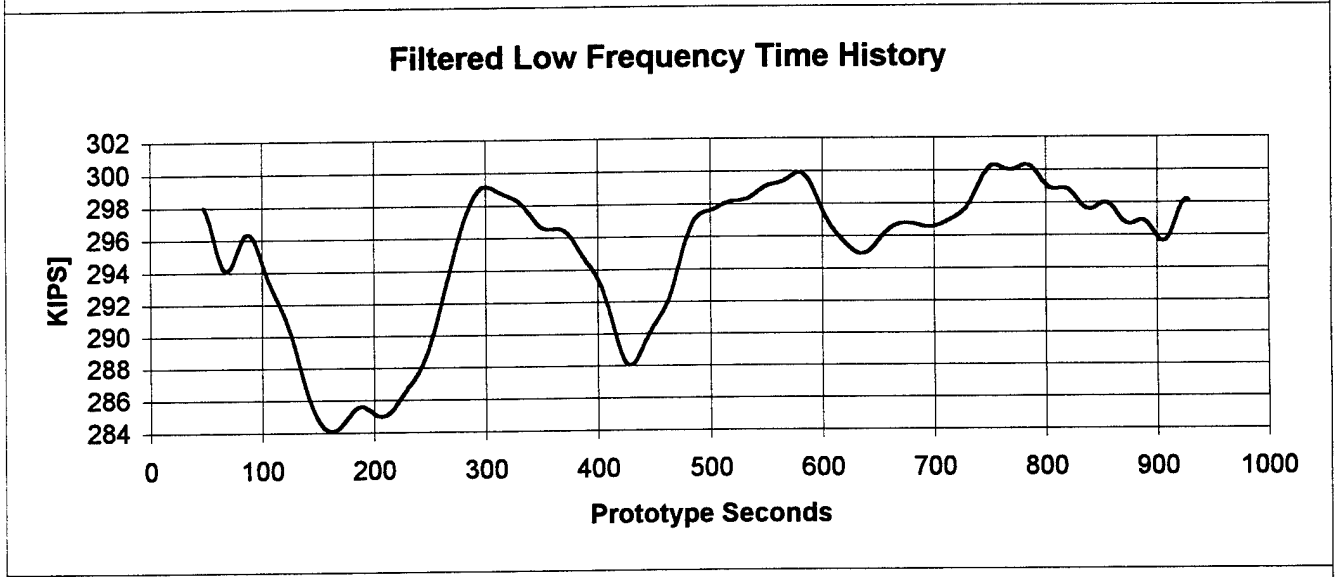


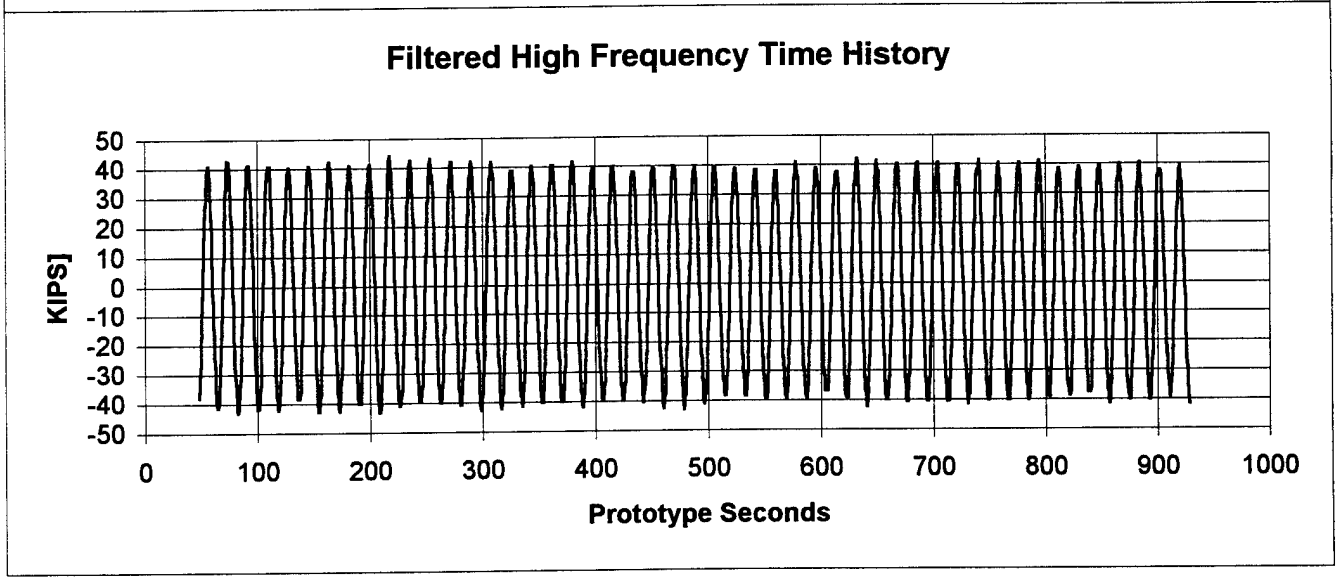
TEST A606 - PT HEAVE



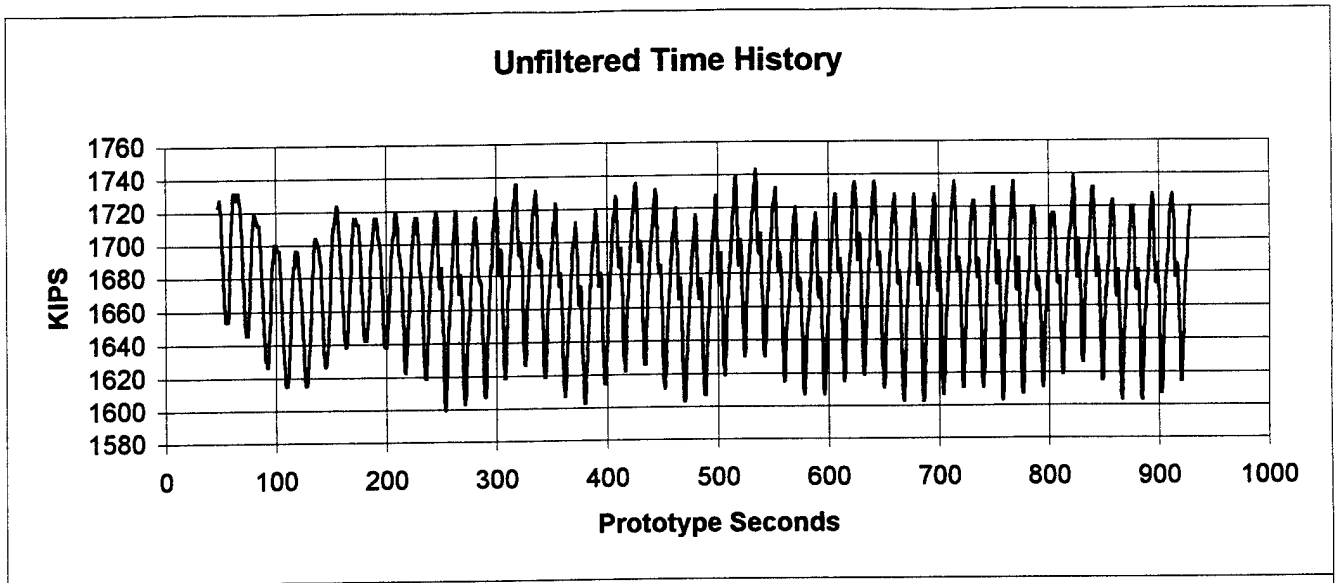
TEST A607 - ML_1 TENSION

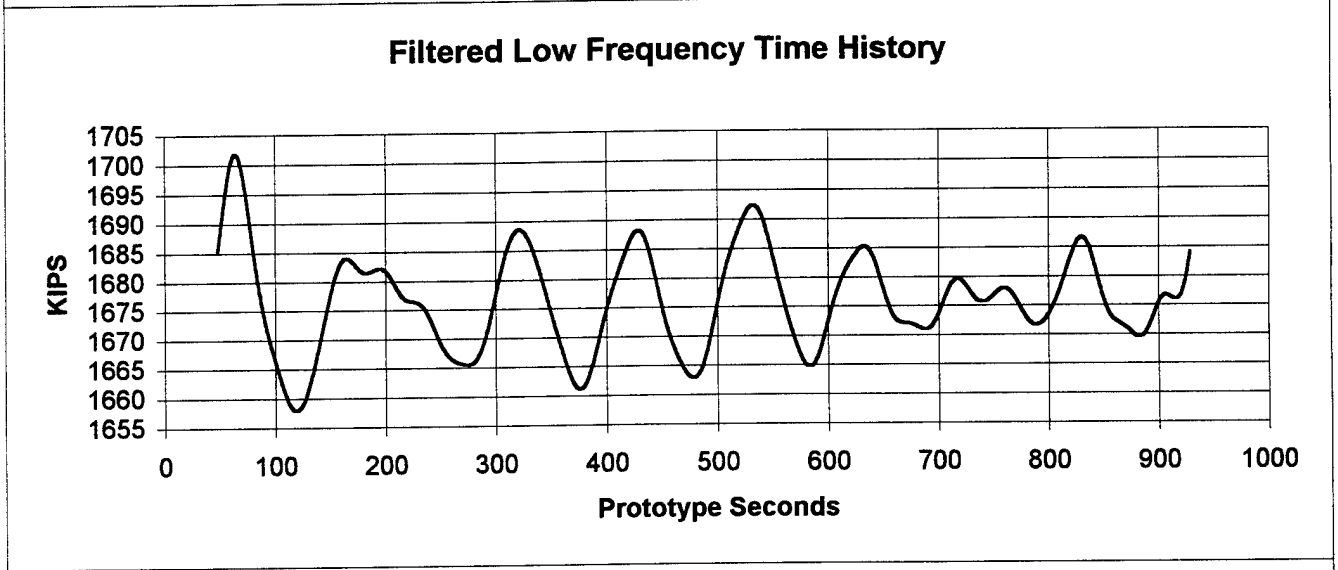


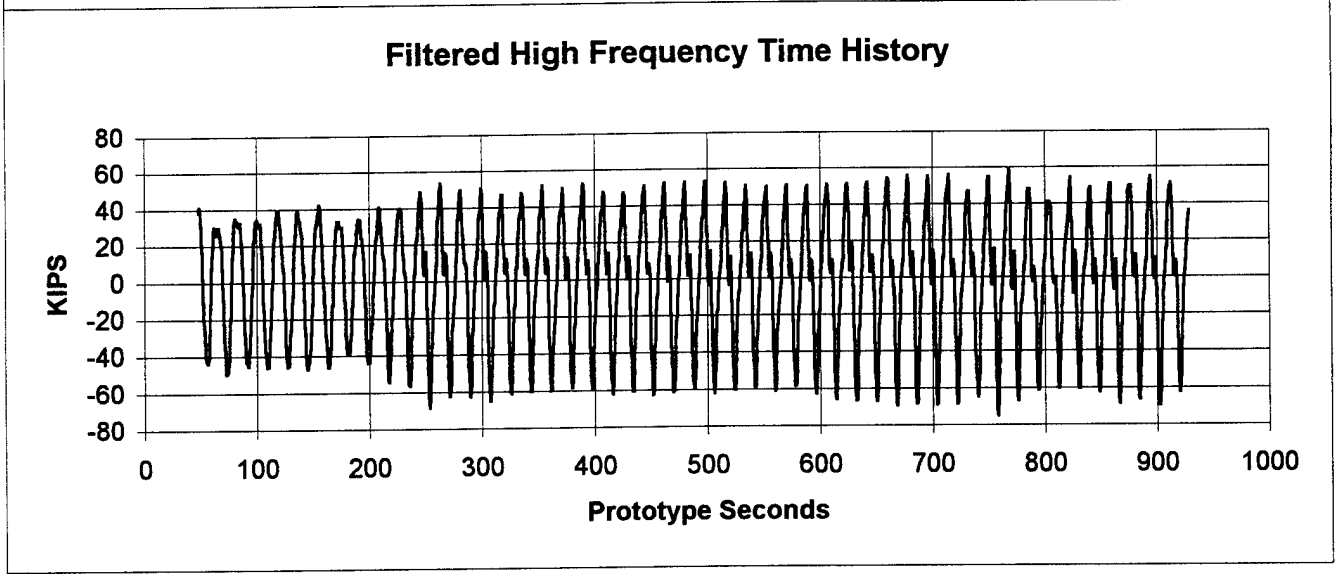



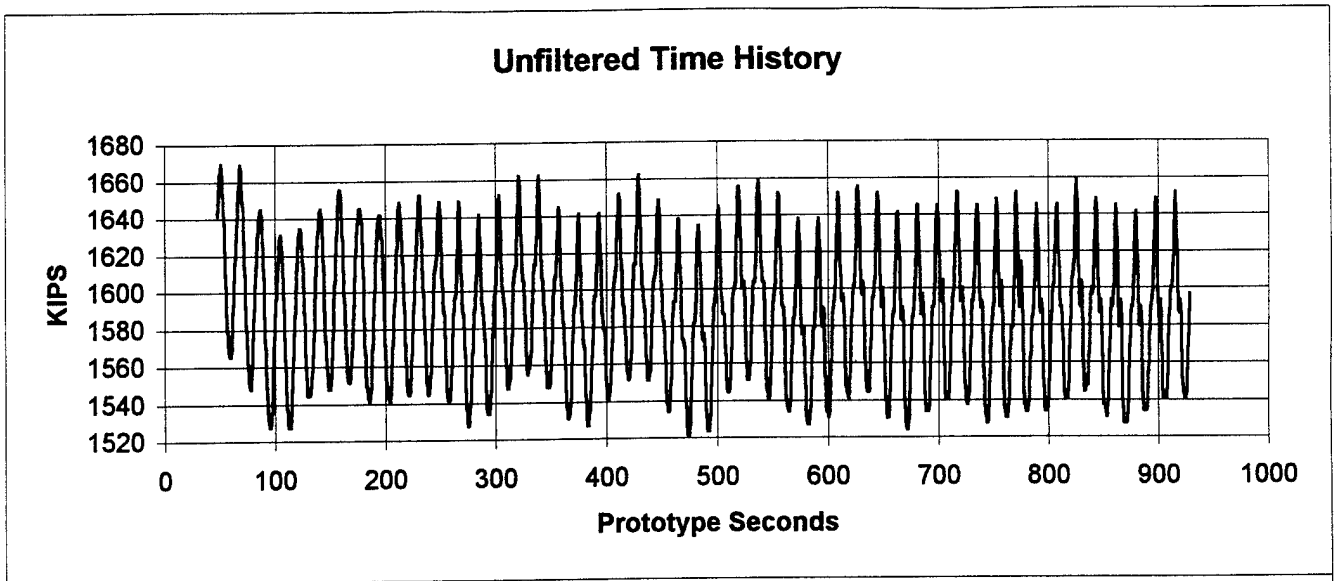
TEST A607 - BUOY 1 TENSION

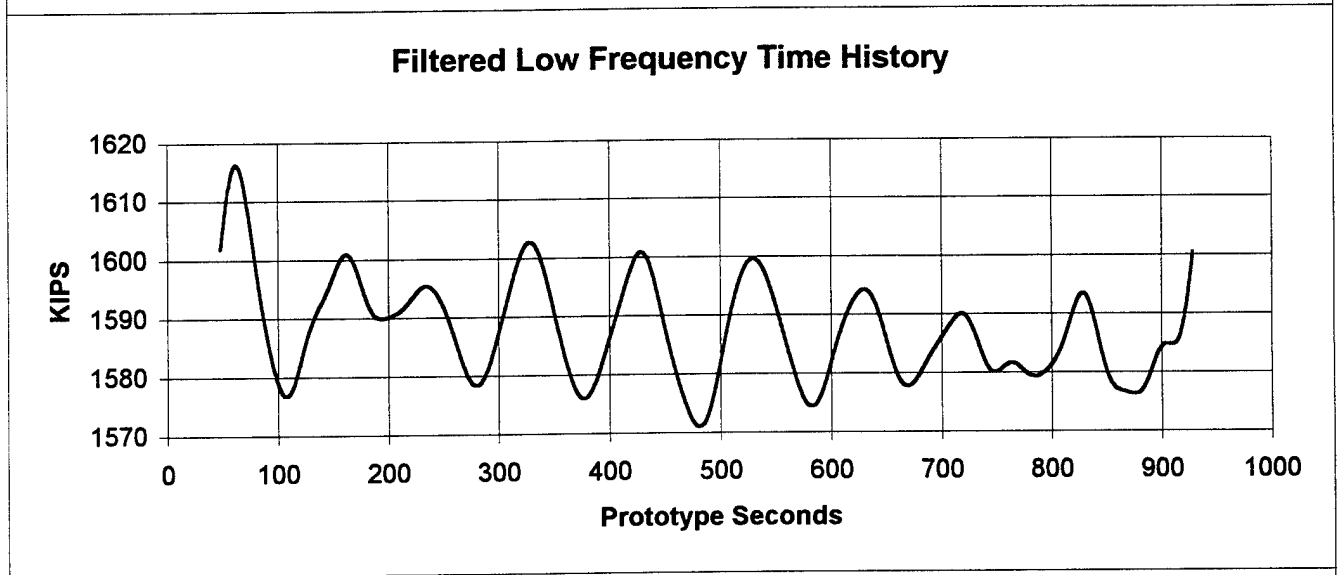


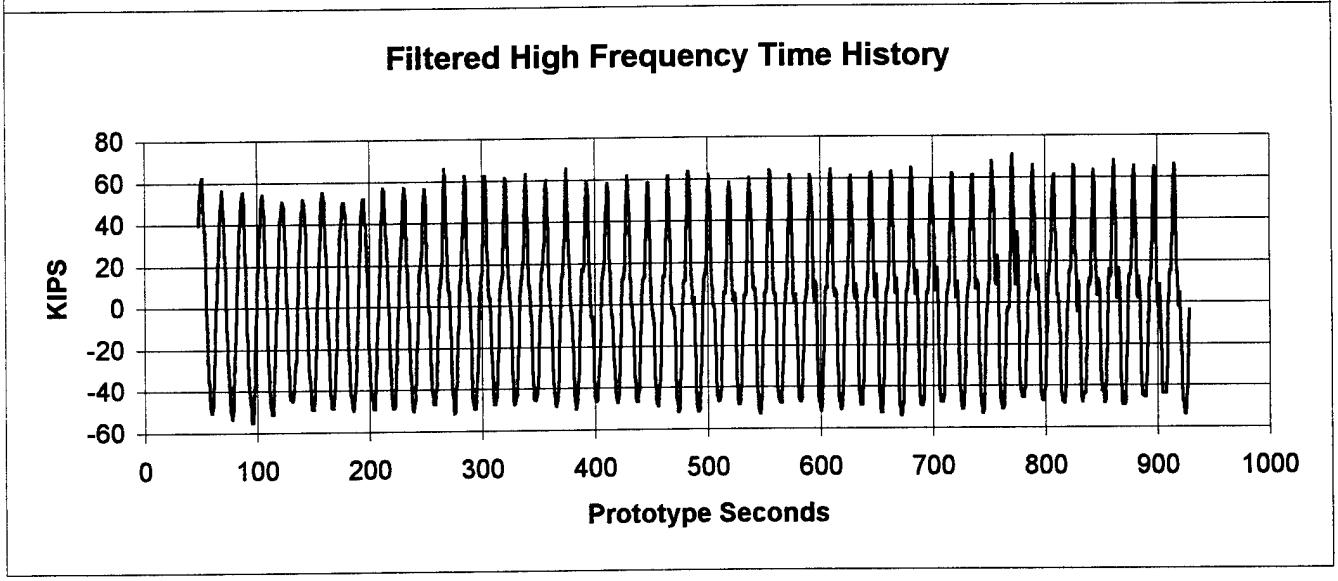



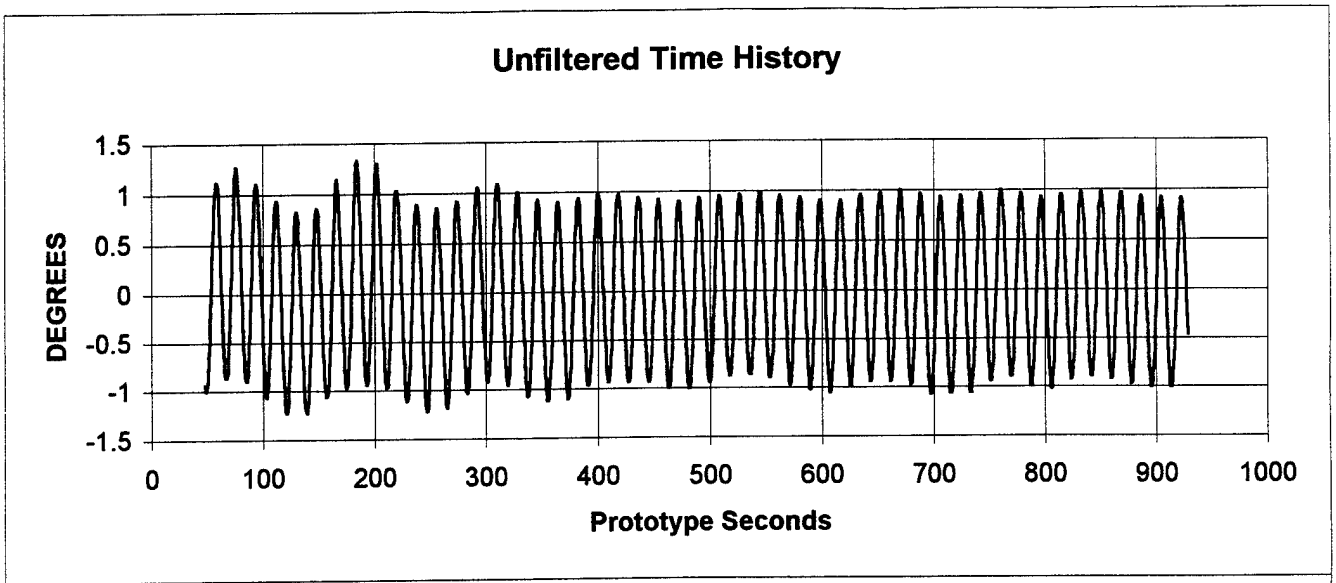
TEST A607 - BUOY 2 TENSION

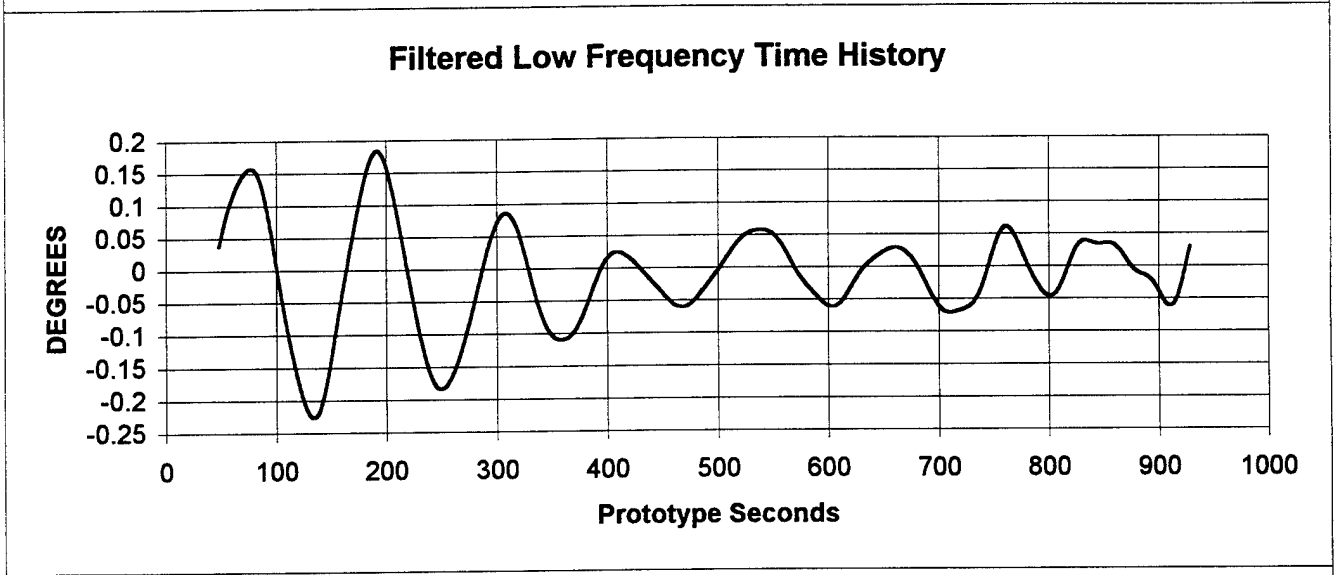


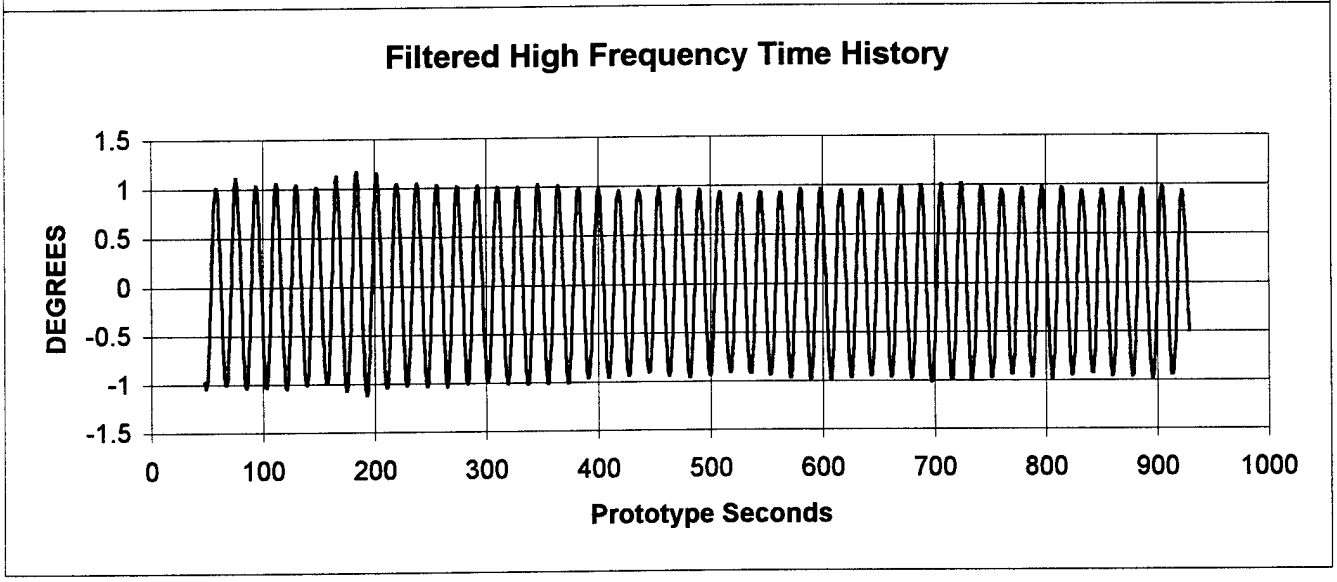



TEST A607 - PITCH

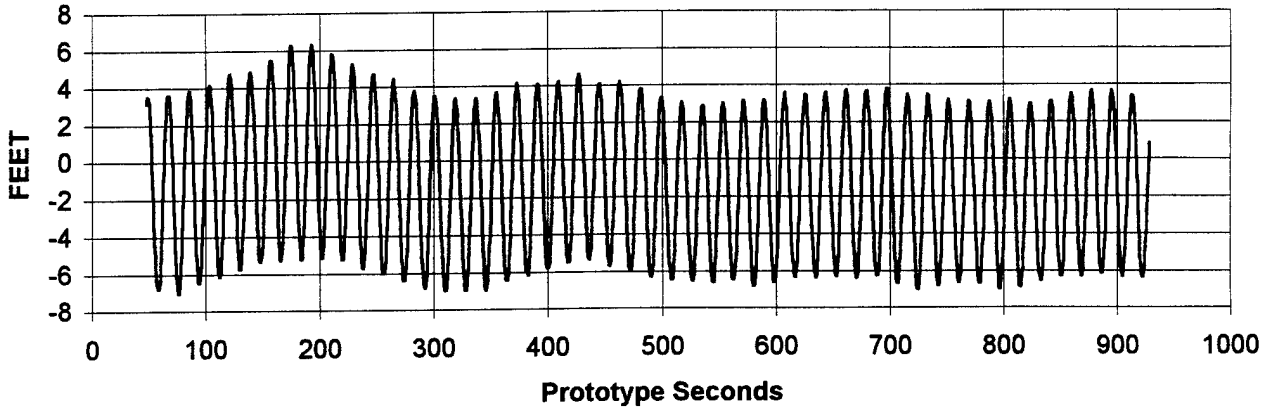


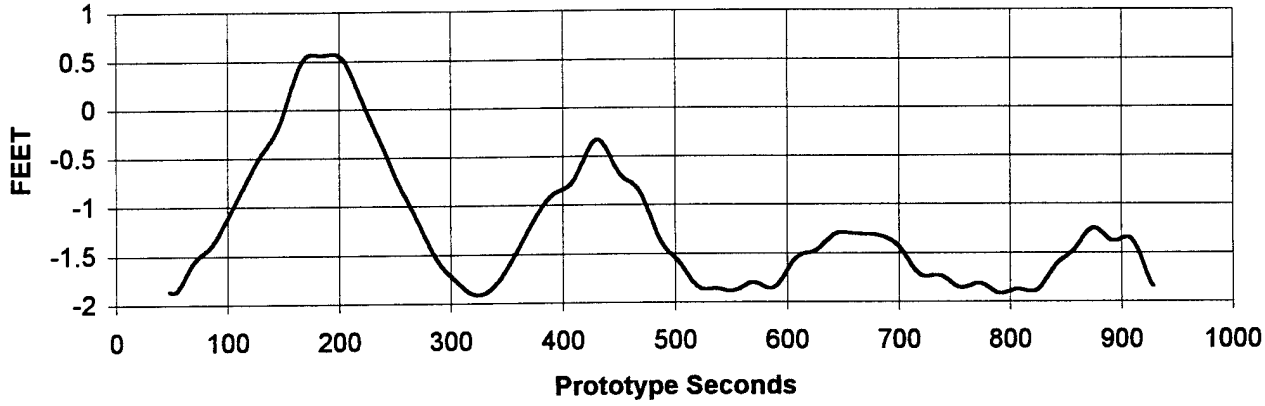



TEST A607 - PT SURGE

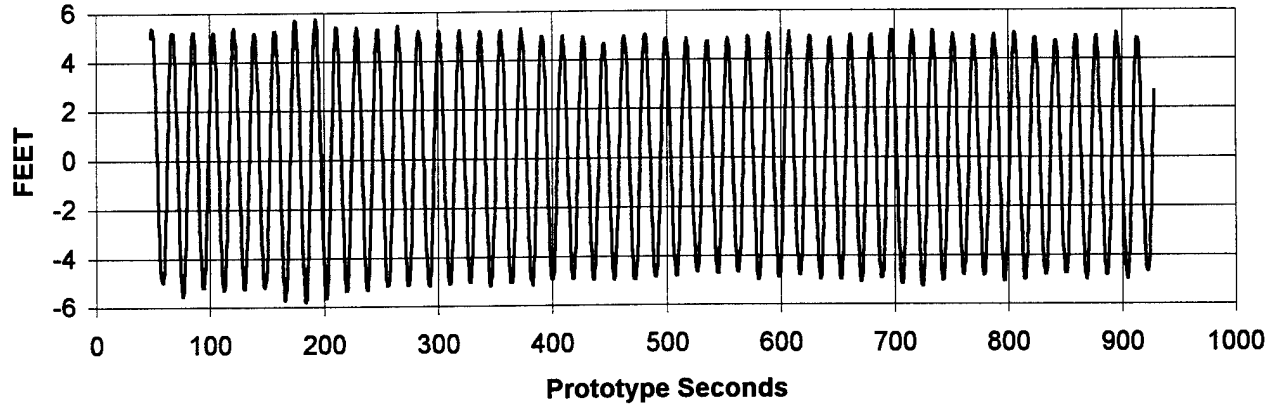
## Unfiltered Time History




## Filtered Low Frequency Time History

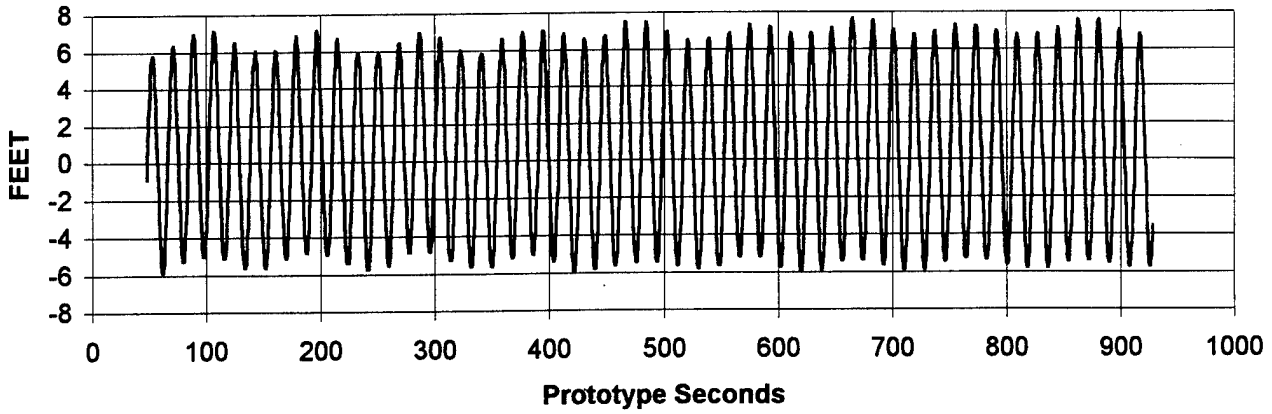



## Filtered High Frequency Time History

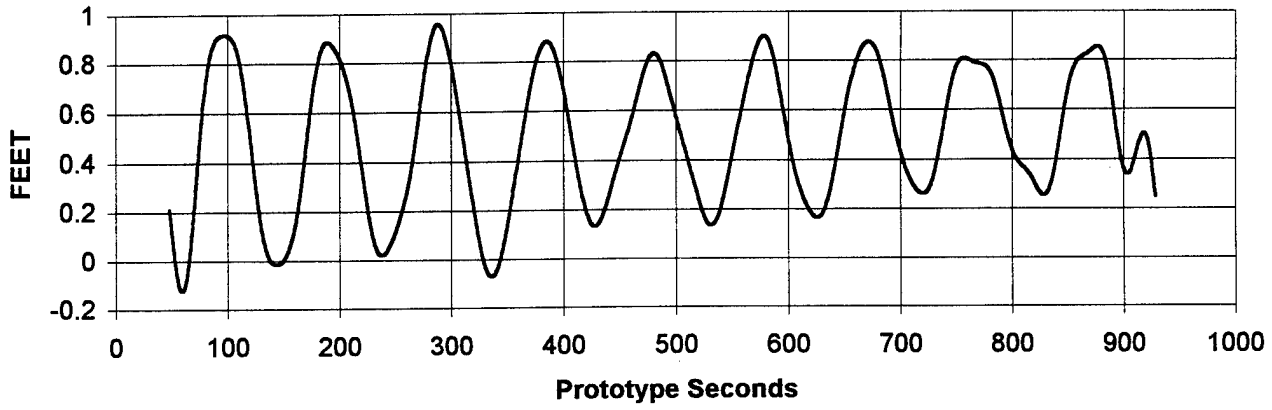


TEST A607 - PT HEAVE

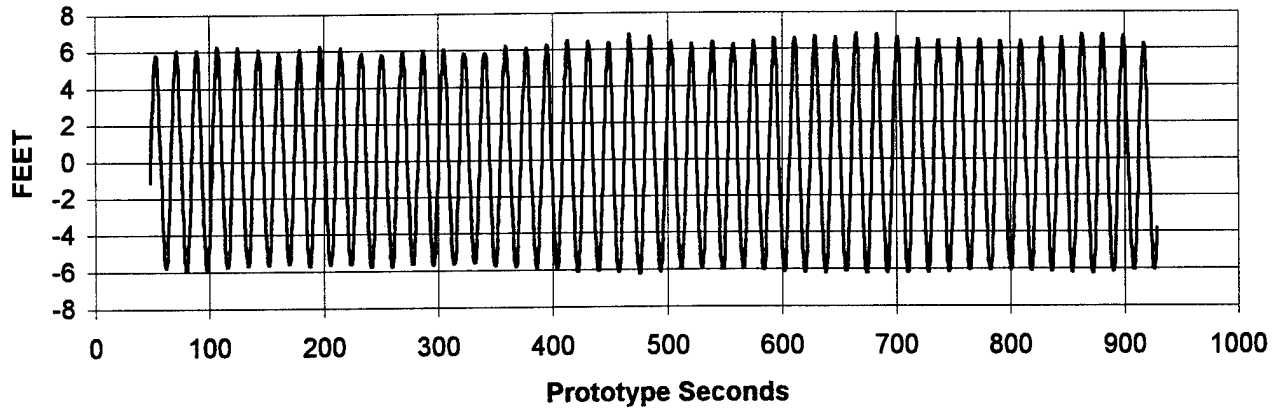
## Unfiltered Time History



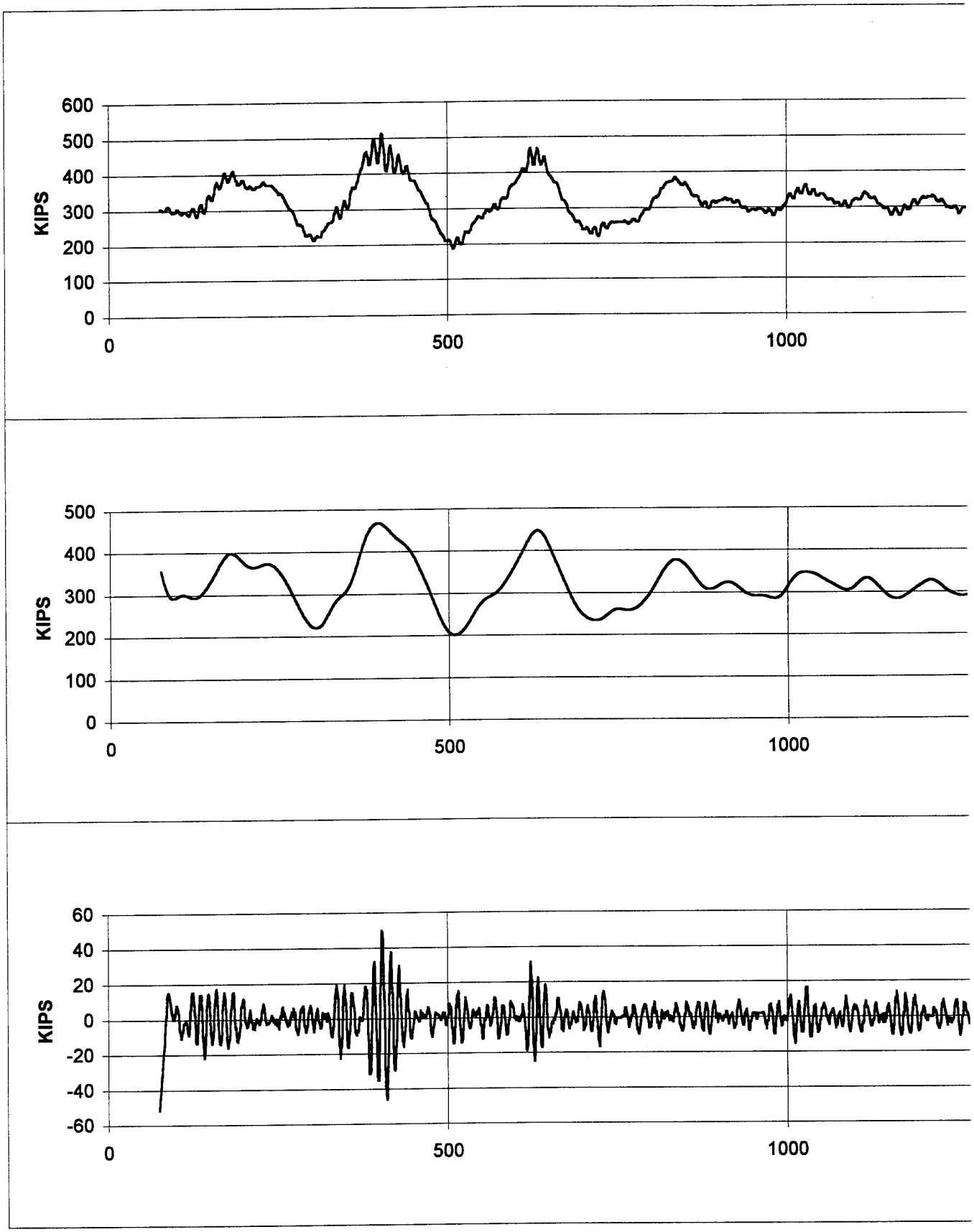

## Filtered Low Frequency Time History



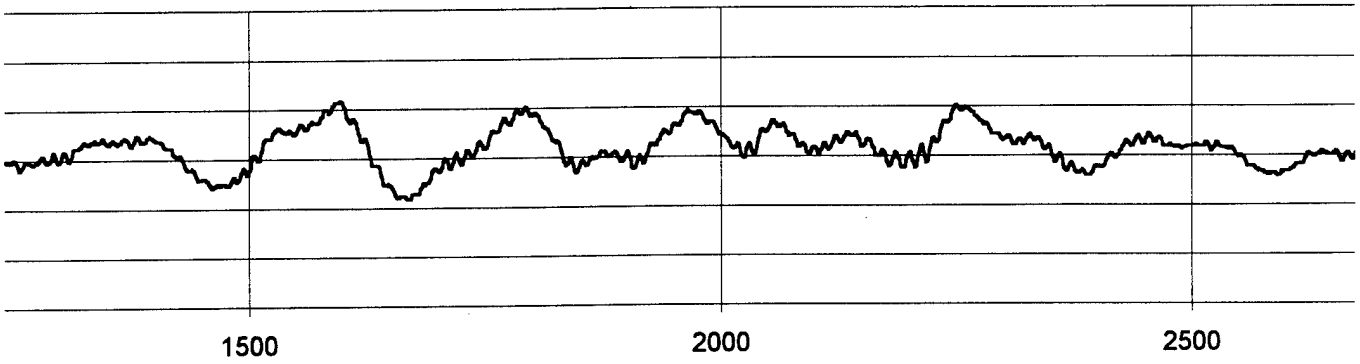

## Filtered High Frequency Time History



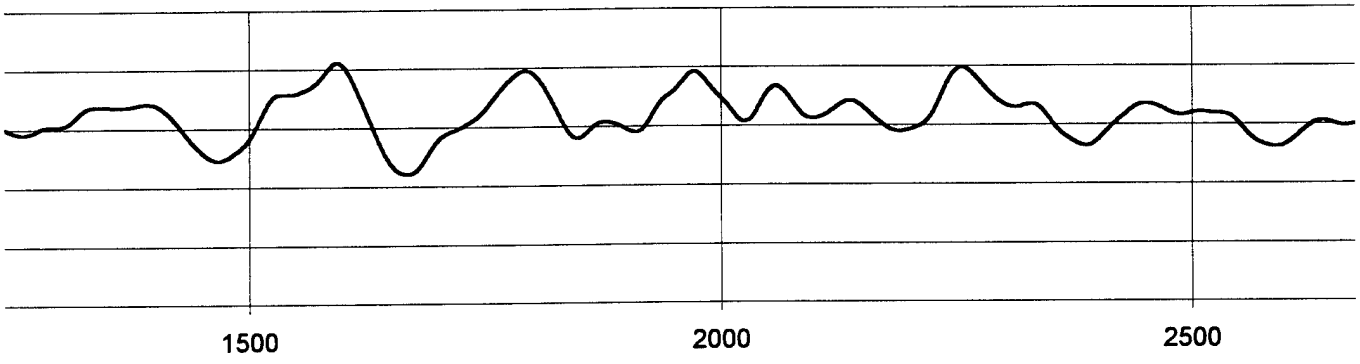
TEST A608 - ML_1 TENSION



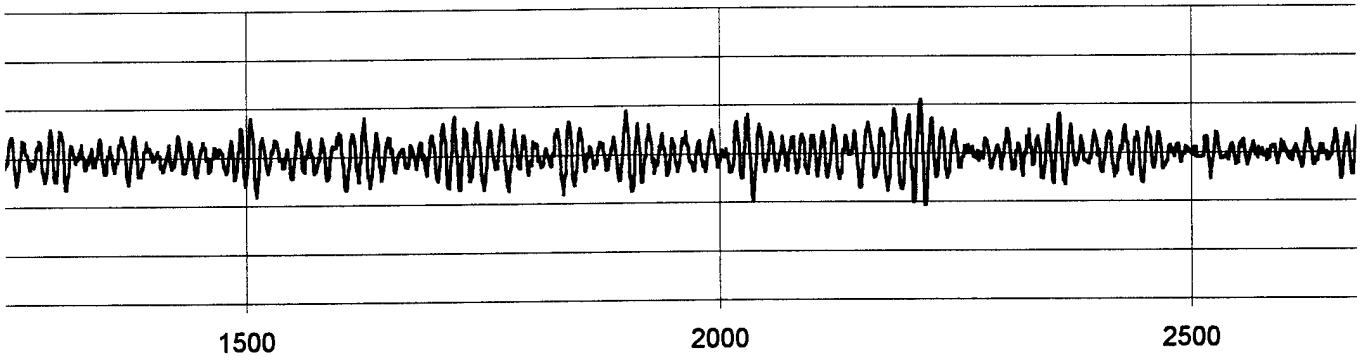
## Unfiltered Time History



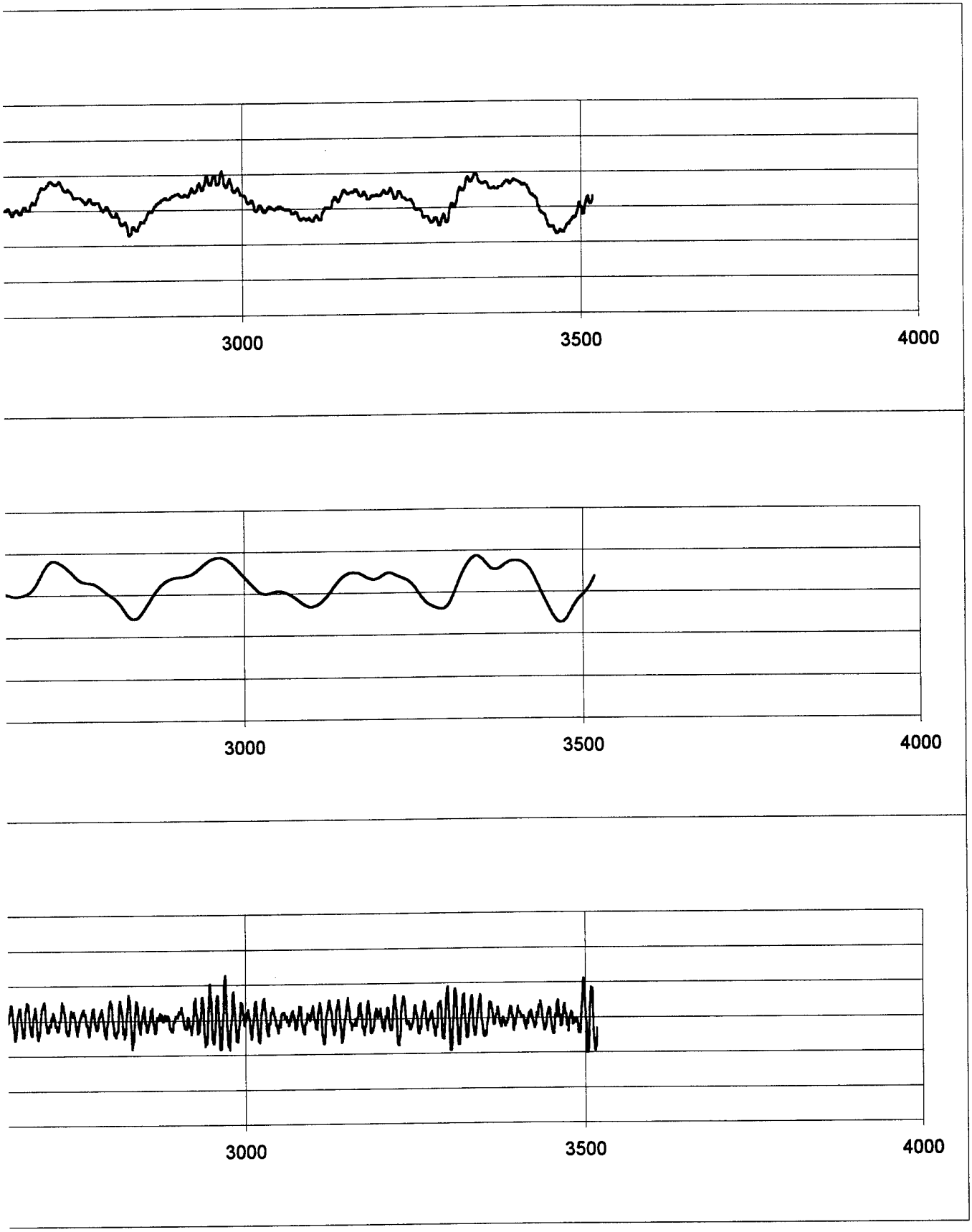

## Filtered Low Frequency Time History



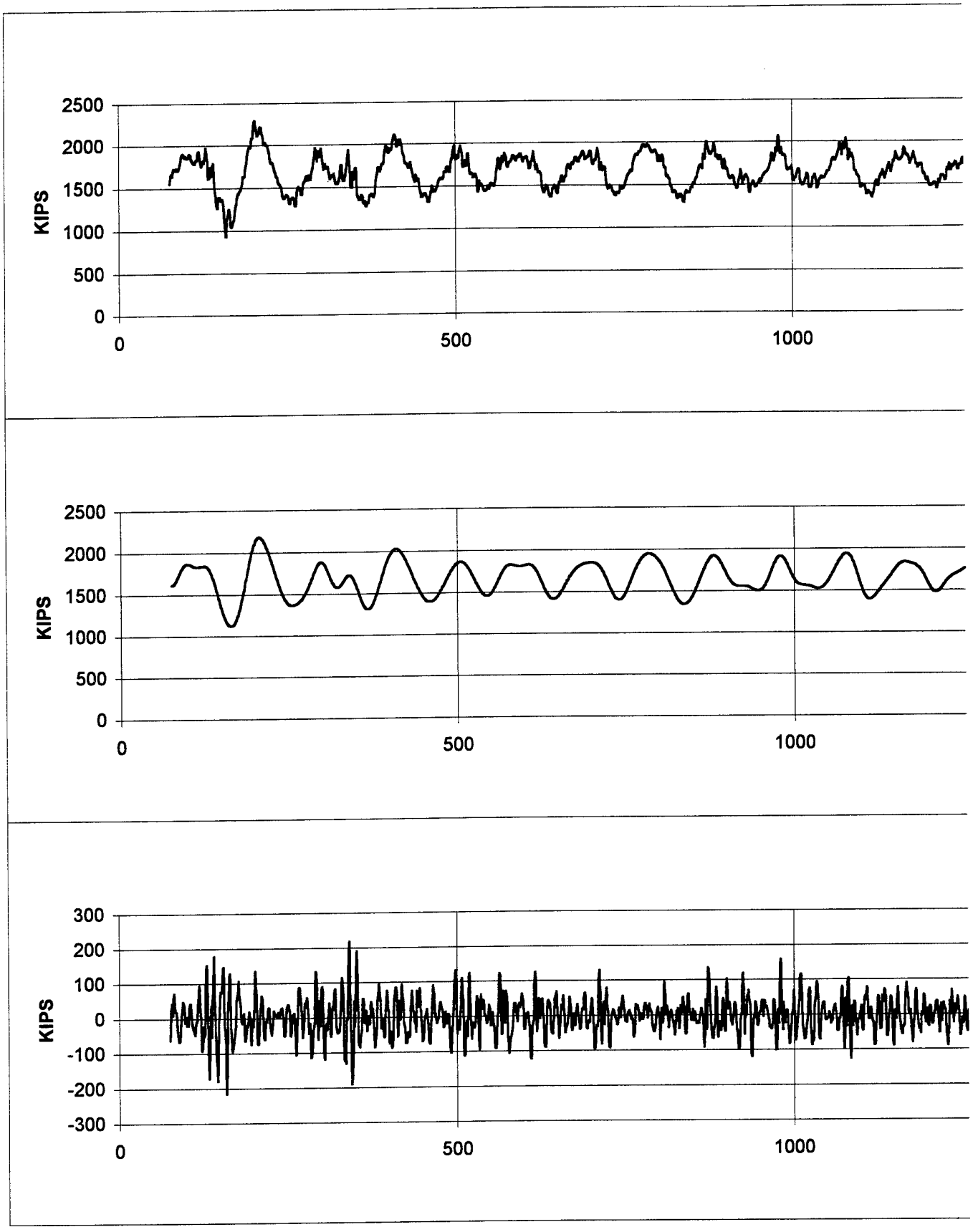

## Filtered High Frequency Time History



TEST A608 - ML_1 TENSION

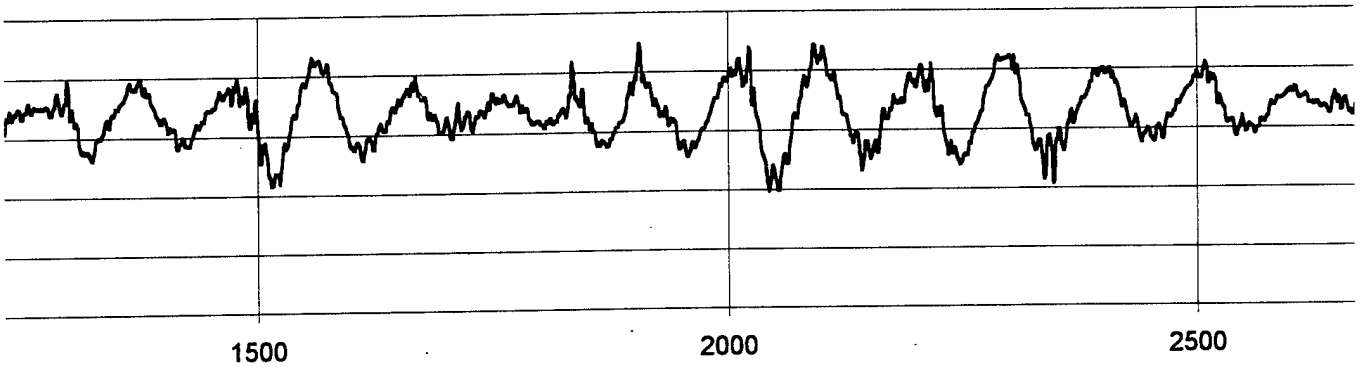


TEST A608 - BUOY 1 TENSION

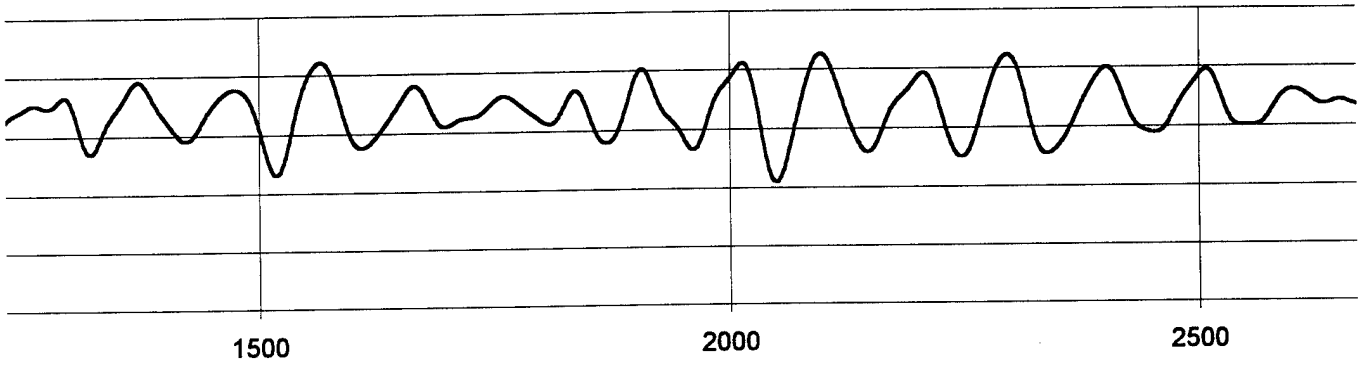


TEST A608 - BUOY 1 TENSION

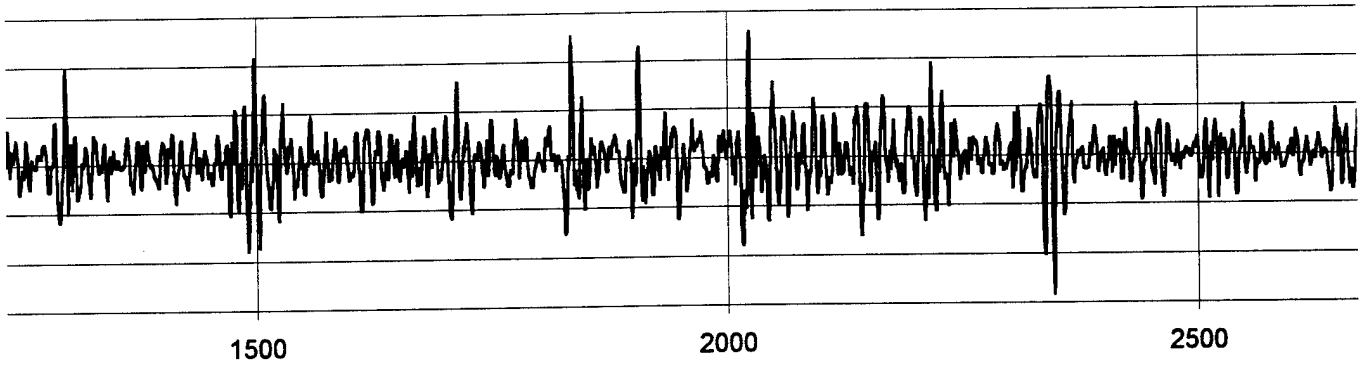
## Unfiltered Time History



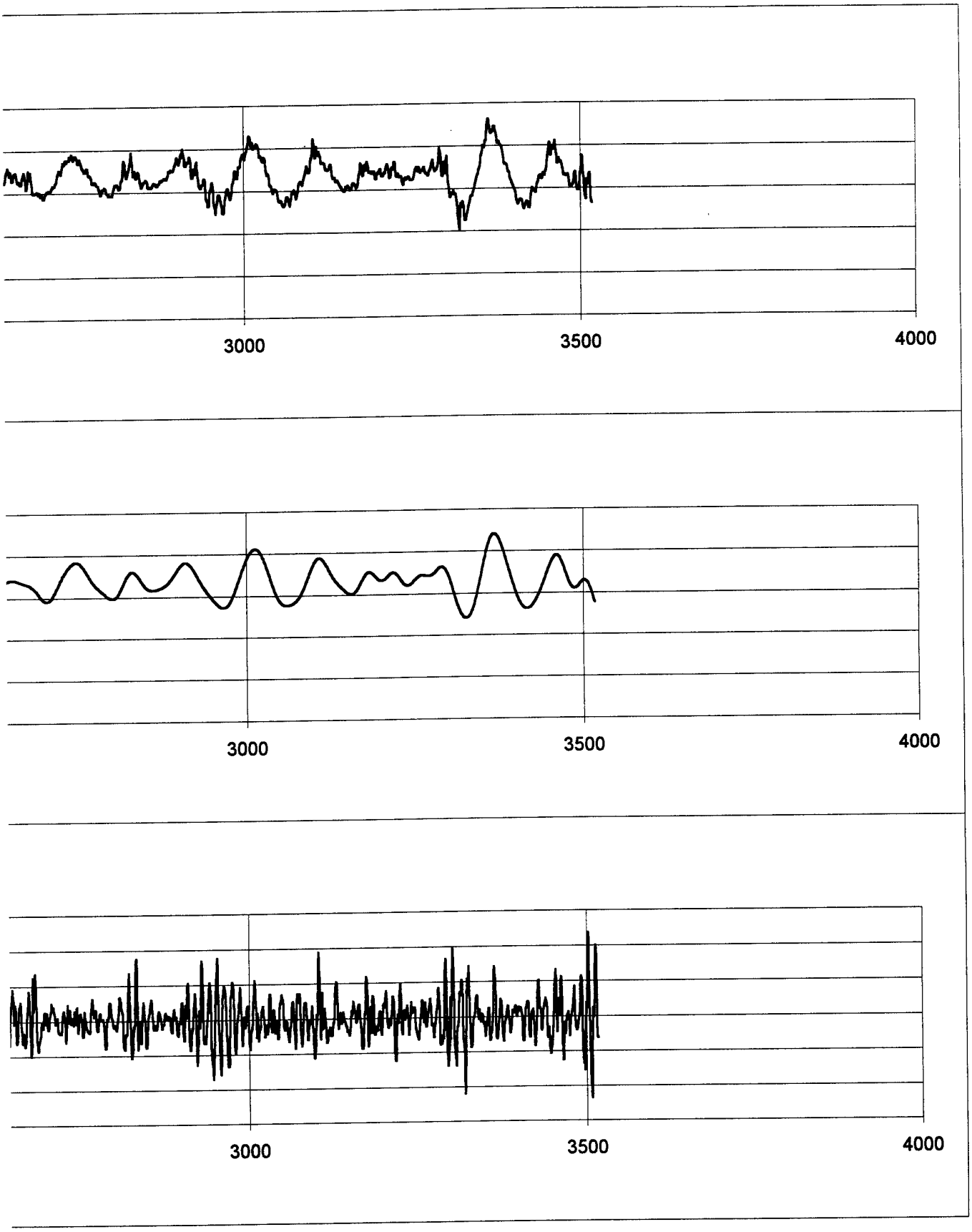

## Filtered Low Frequency Time History



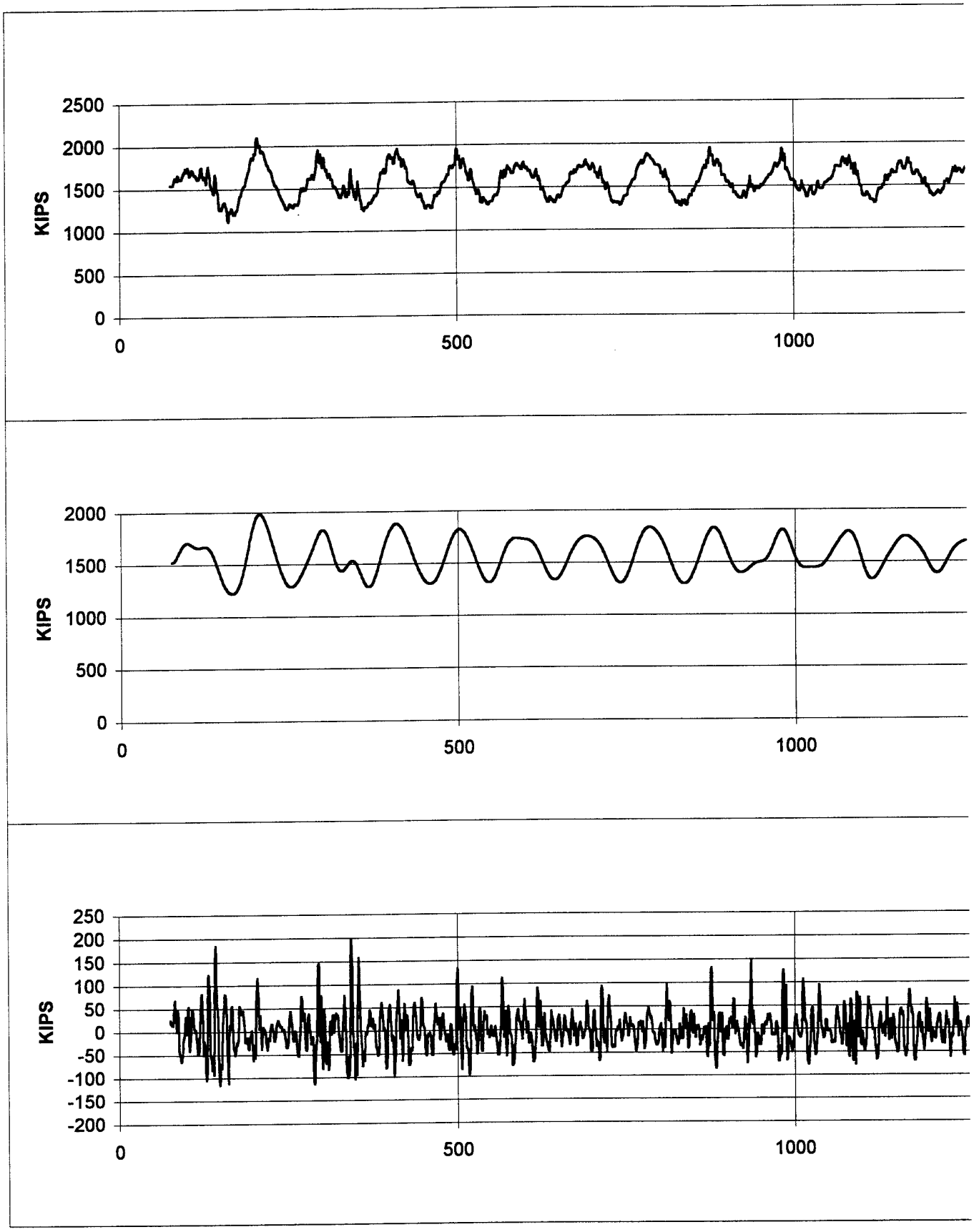

## Filtered High Frequency Time History



TEST A608 - BUOY 1 TENSION

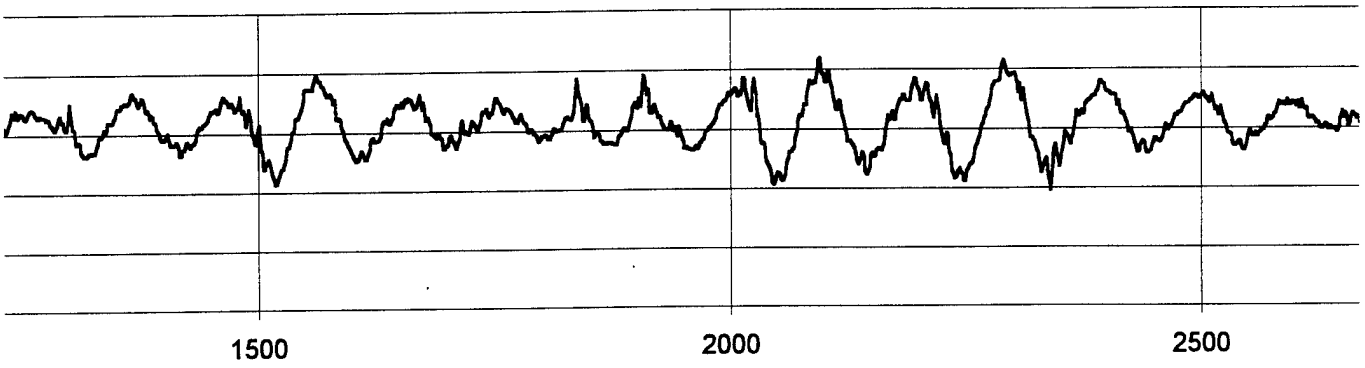


TEST A608 - BUOY 2 TENSION

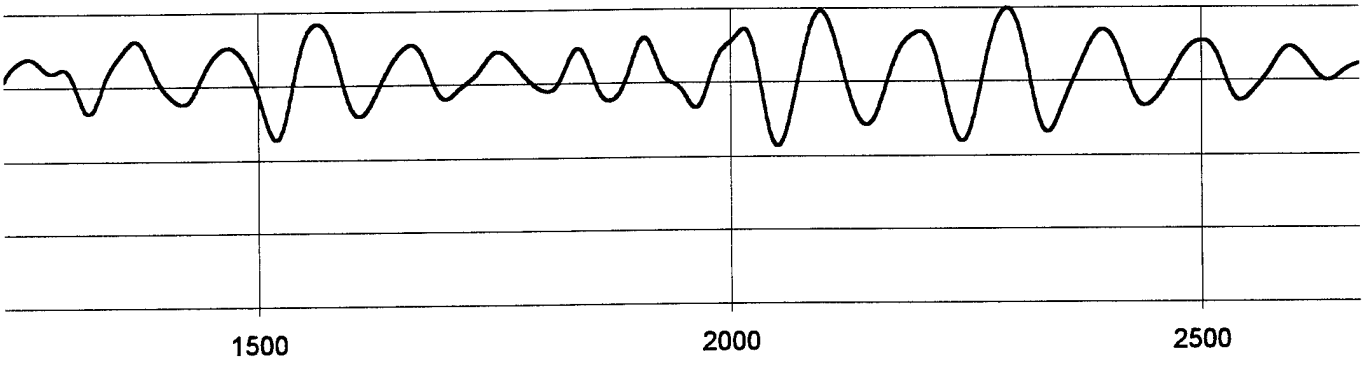


TEST A608 - BUOY 2 TENSION

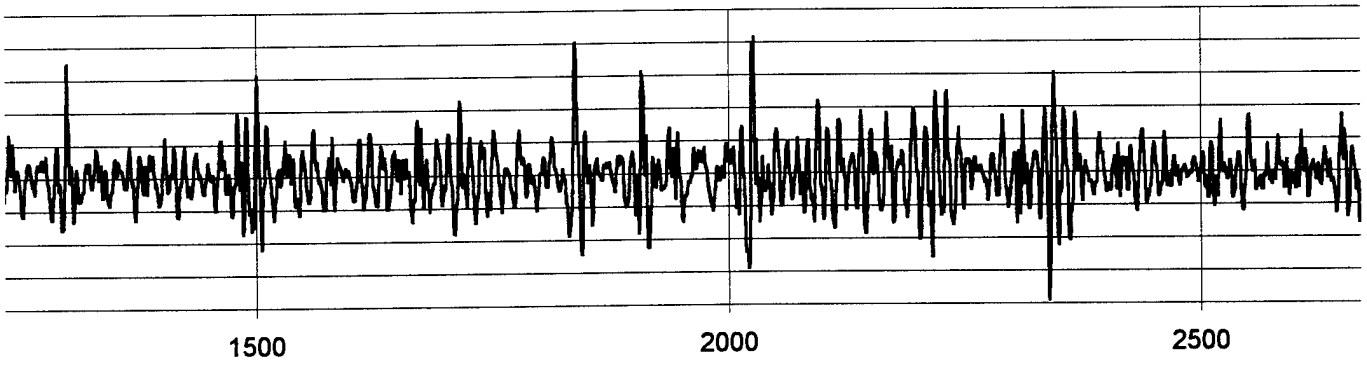
## Unfiltered Time History



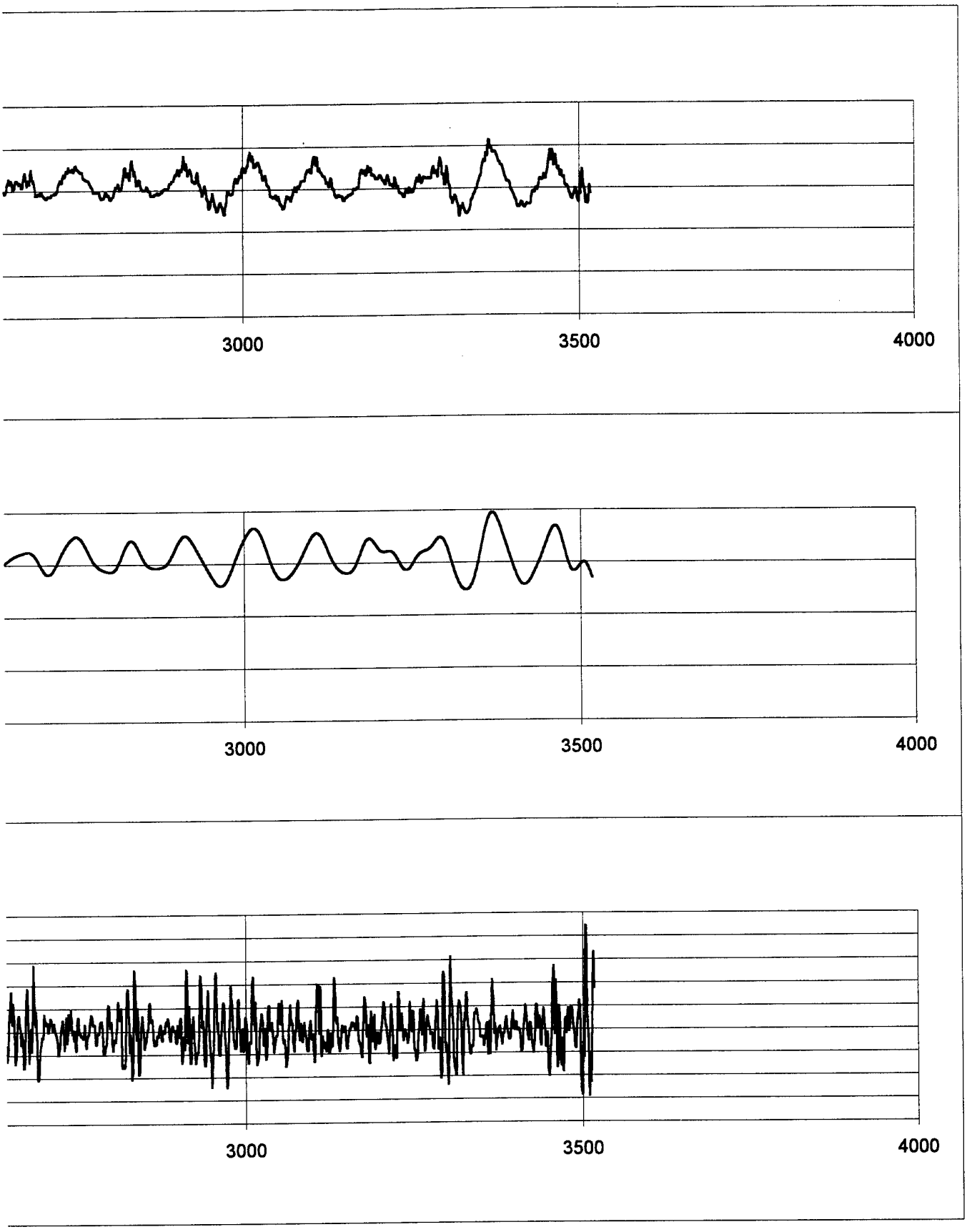

## Filtered Low Frequency Time History



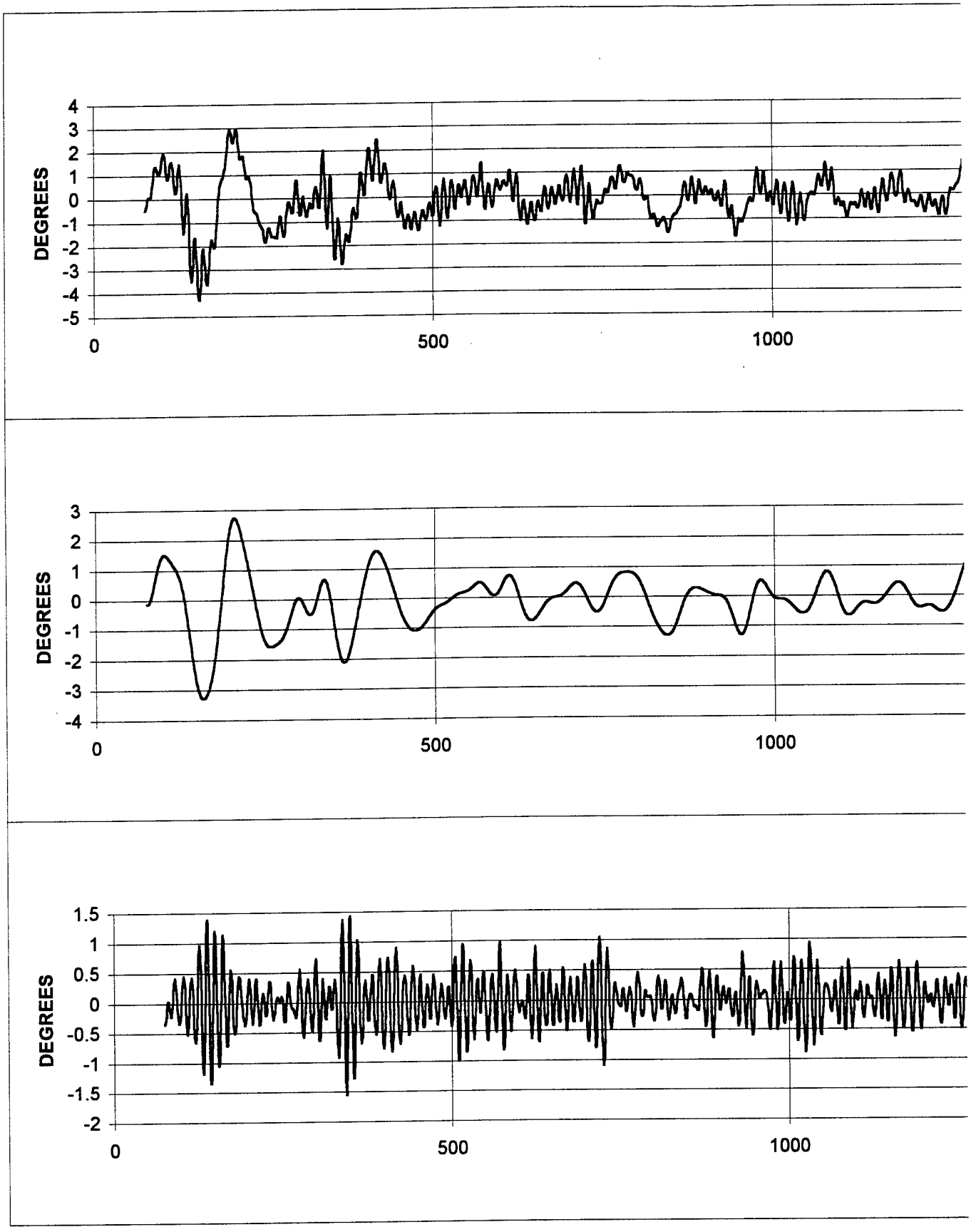

## Filtered High Frequency Time History



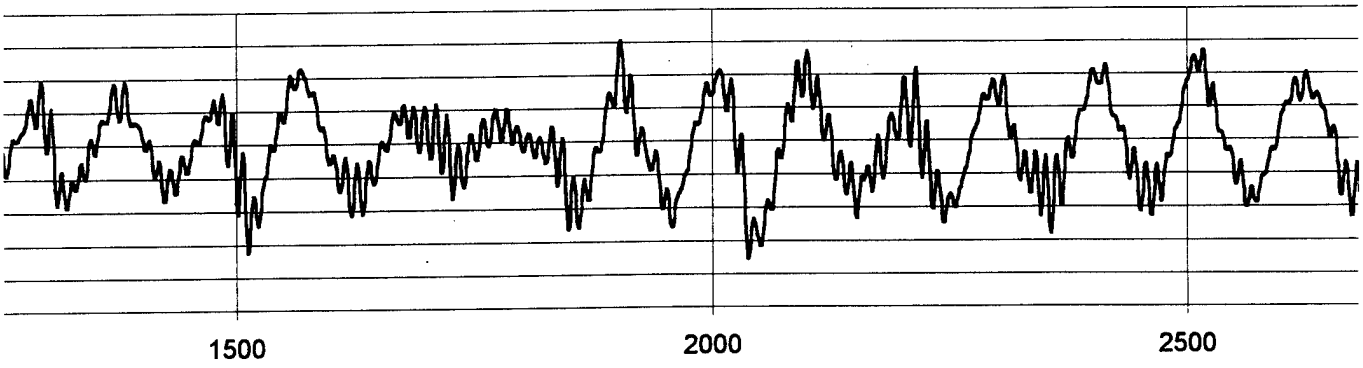
TEST A608 - BUOY 2 TENSION



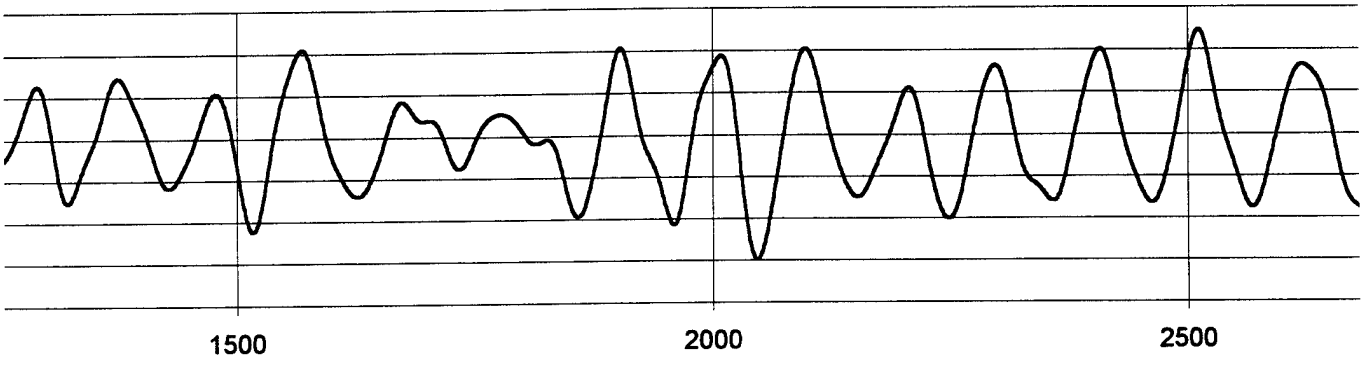
TEST A608 - PITCH



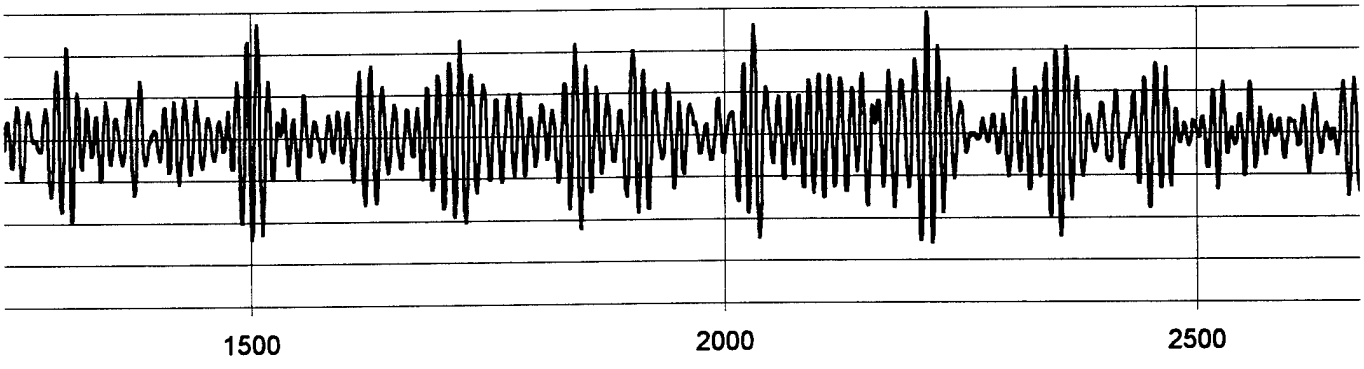
## Unfiltered Time History



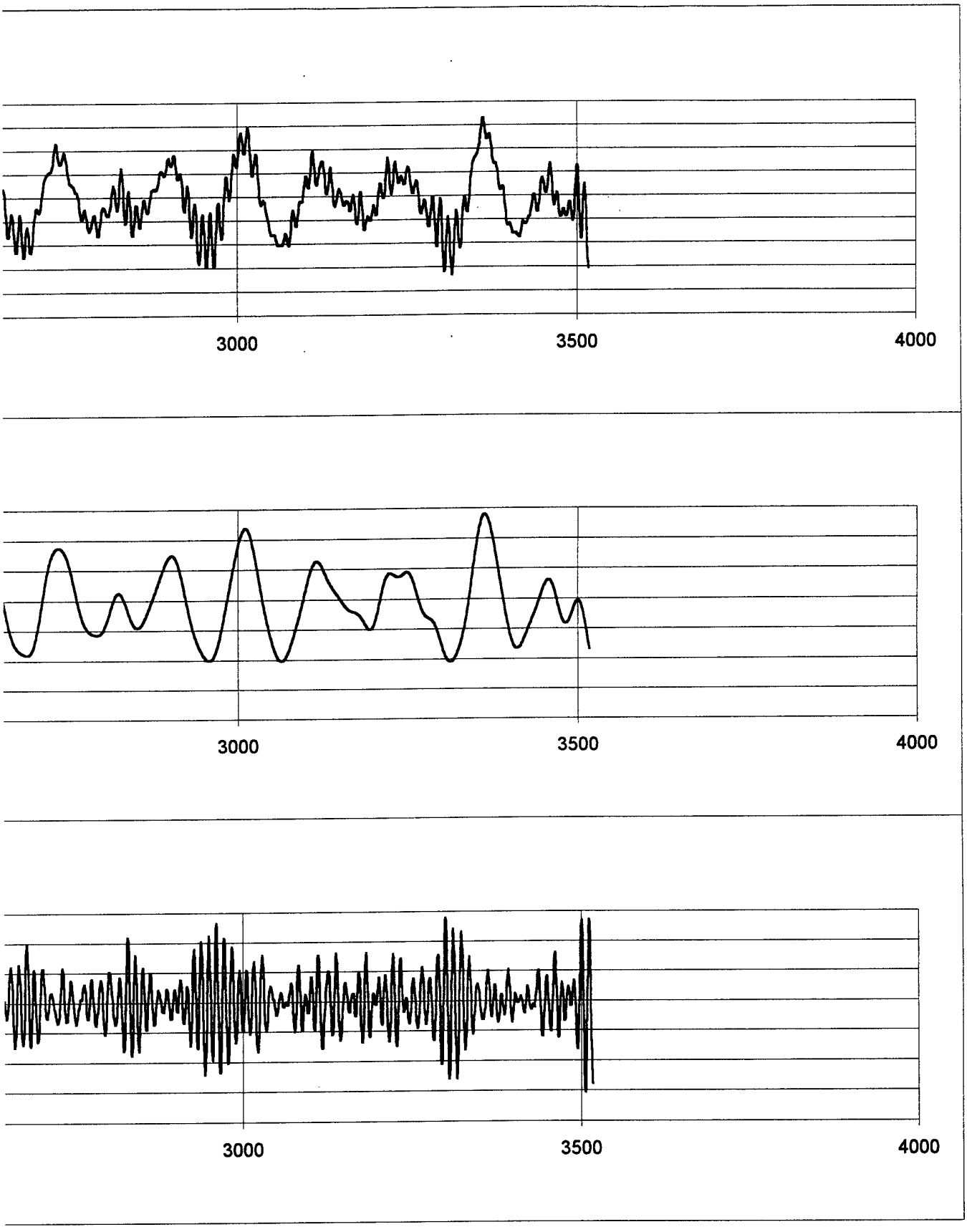

## Filtered Low Frequency Time History



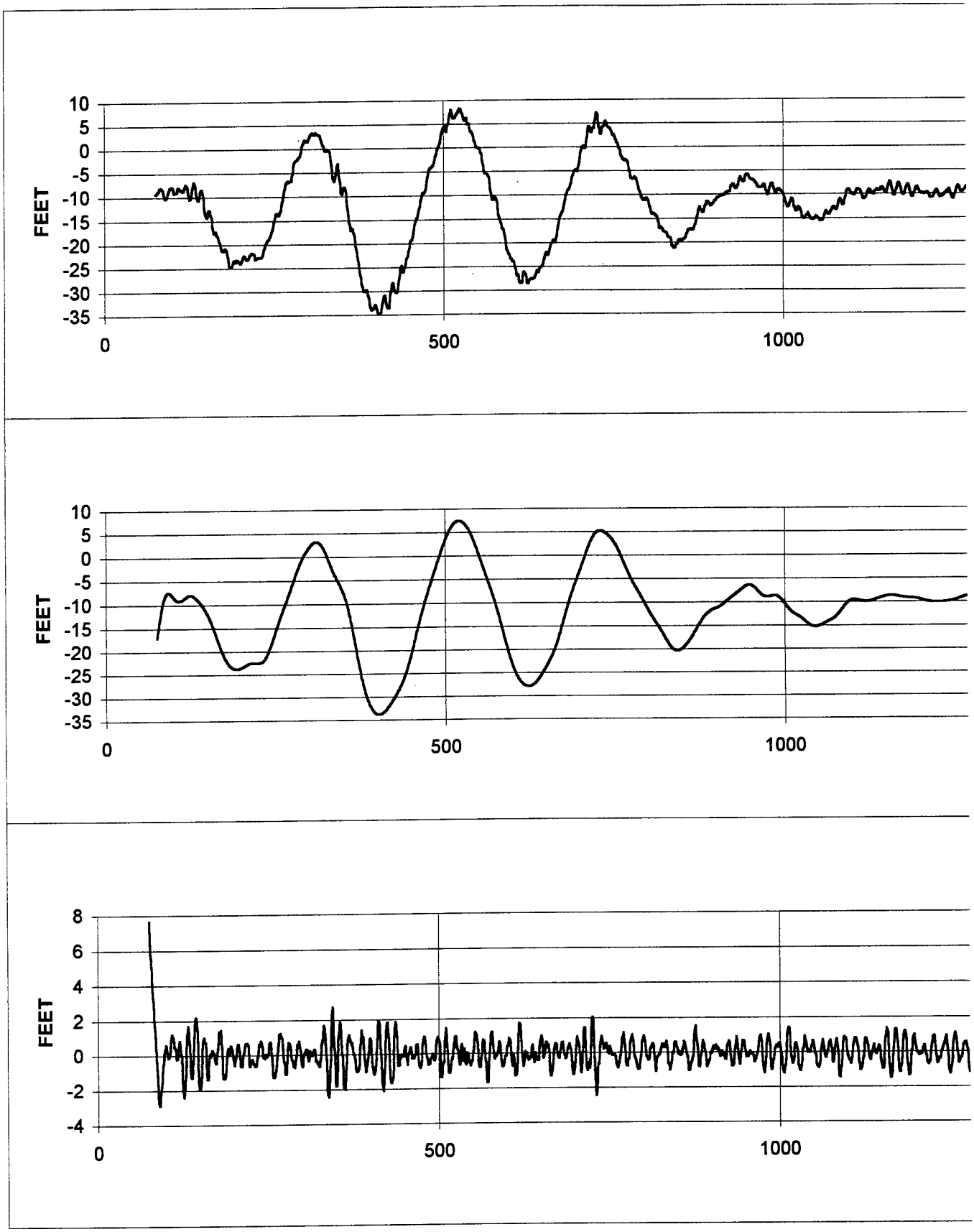

## Filtered High Frequency Time History



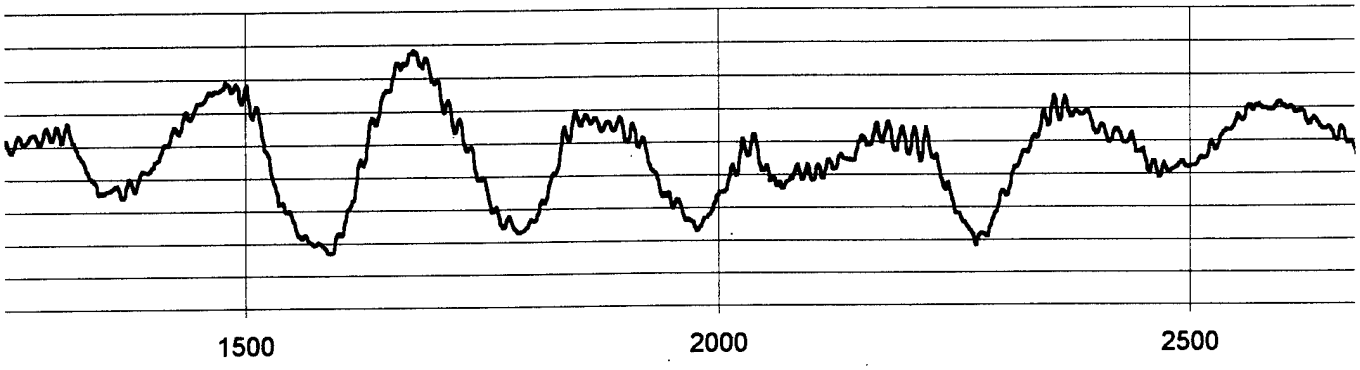
TEST A608 - PITCH



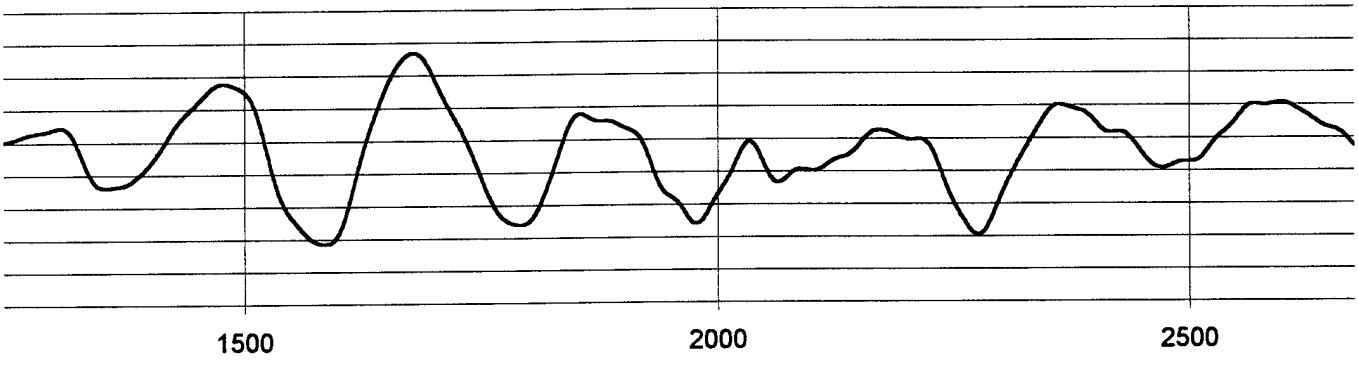
TEST A608 - PT SURGE



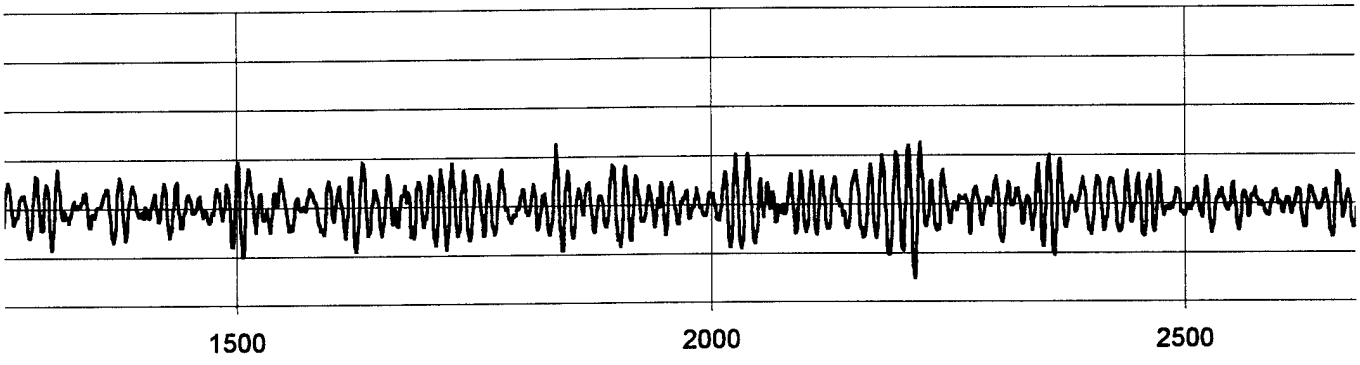
## Unfiltered Time History



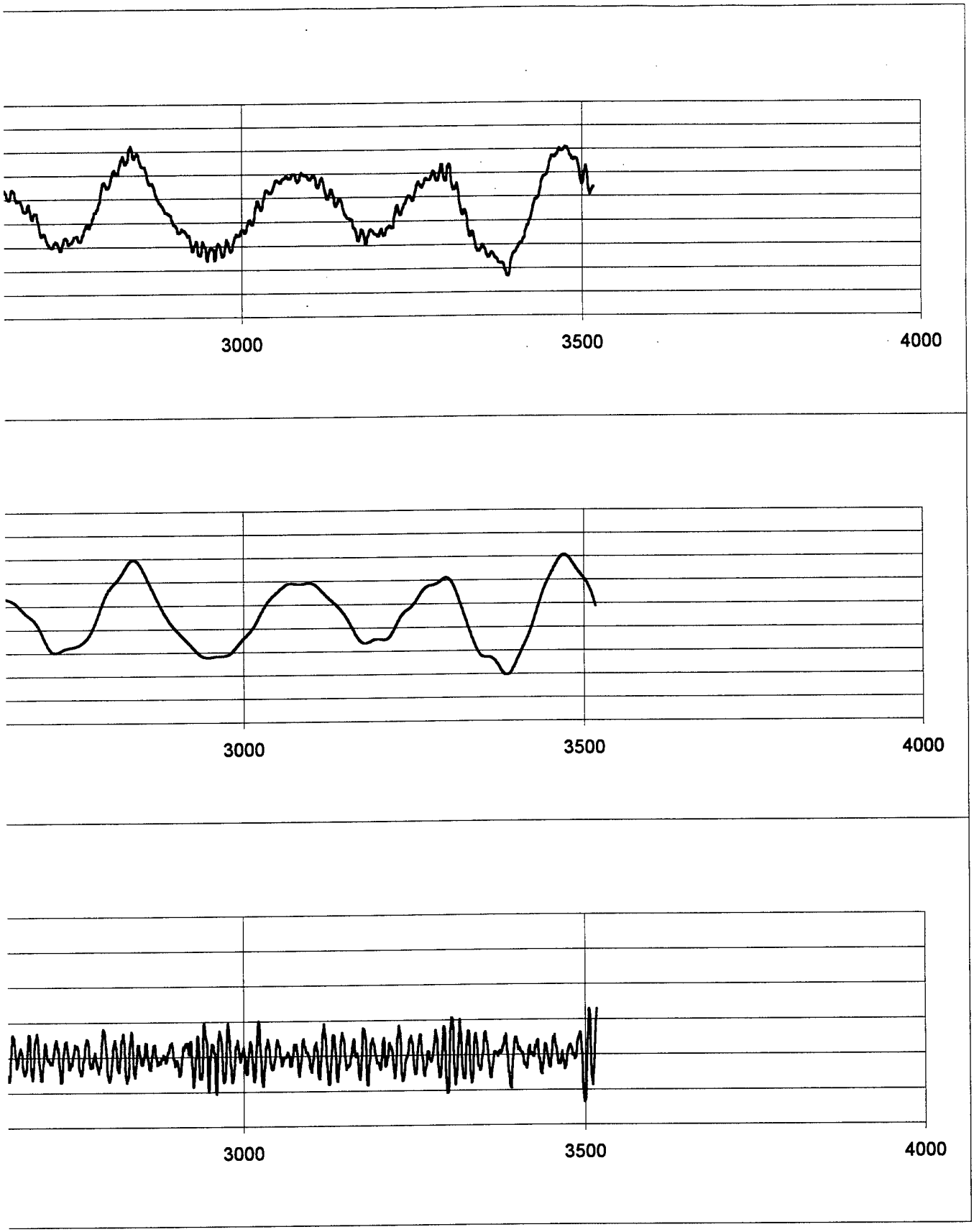

## Filtered Low Frequency Time History



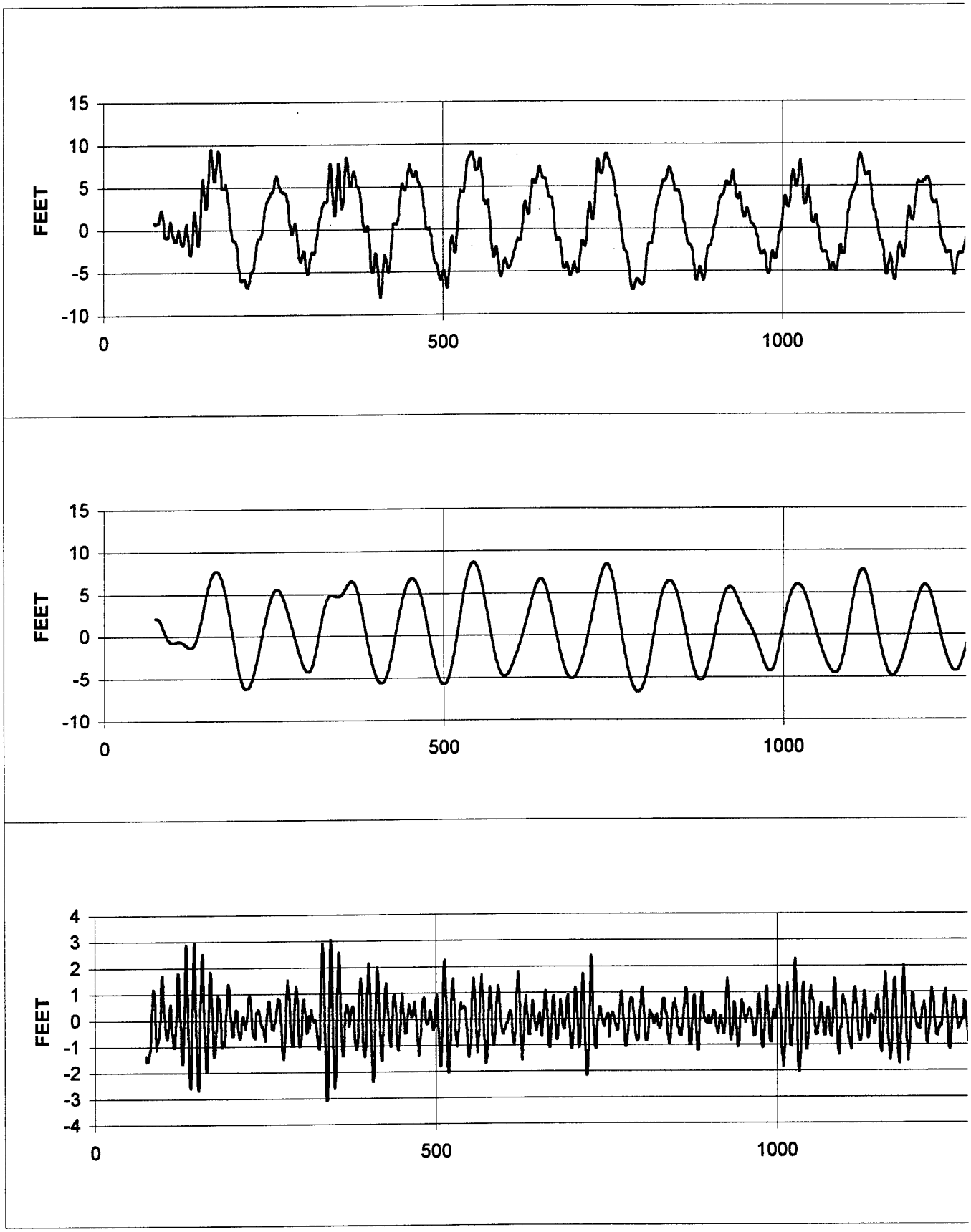

## Filtered High Frequency Time History



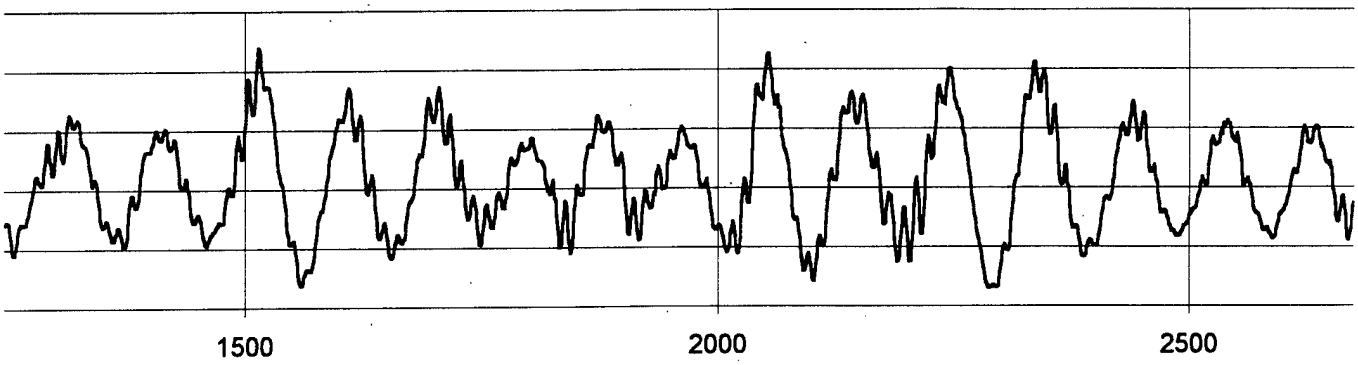
TEST A608 - PT SURGE



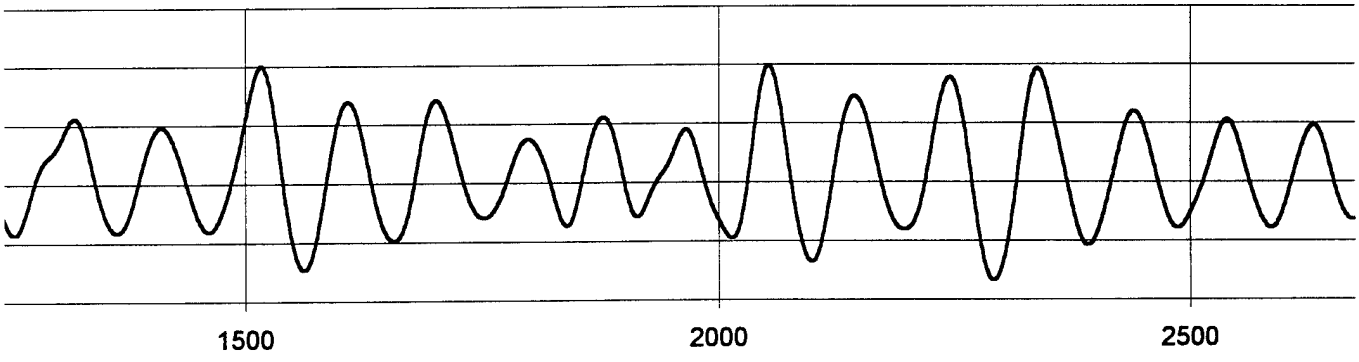
TEST A608 - PT HEAVE



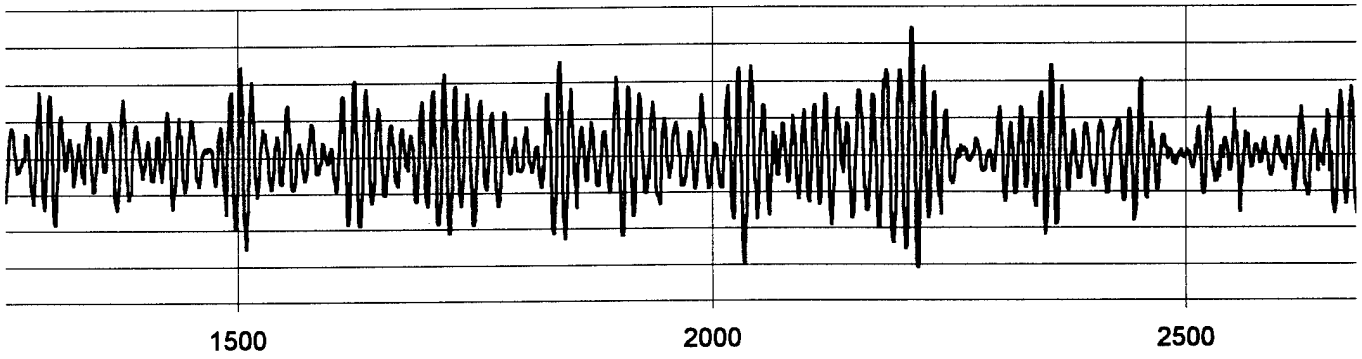
## Unfiltered Time History



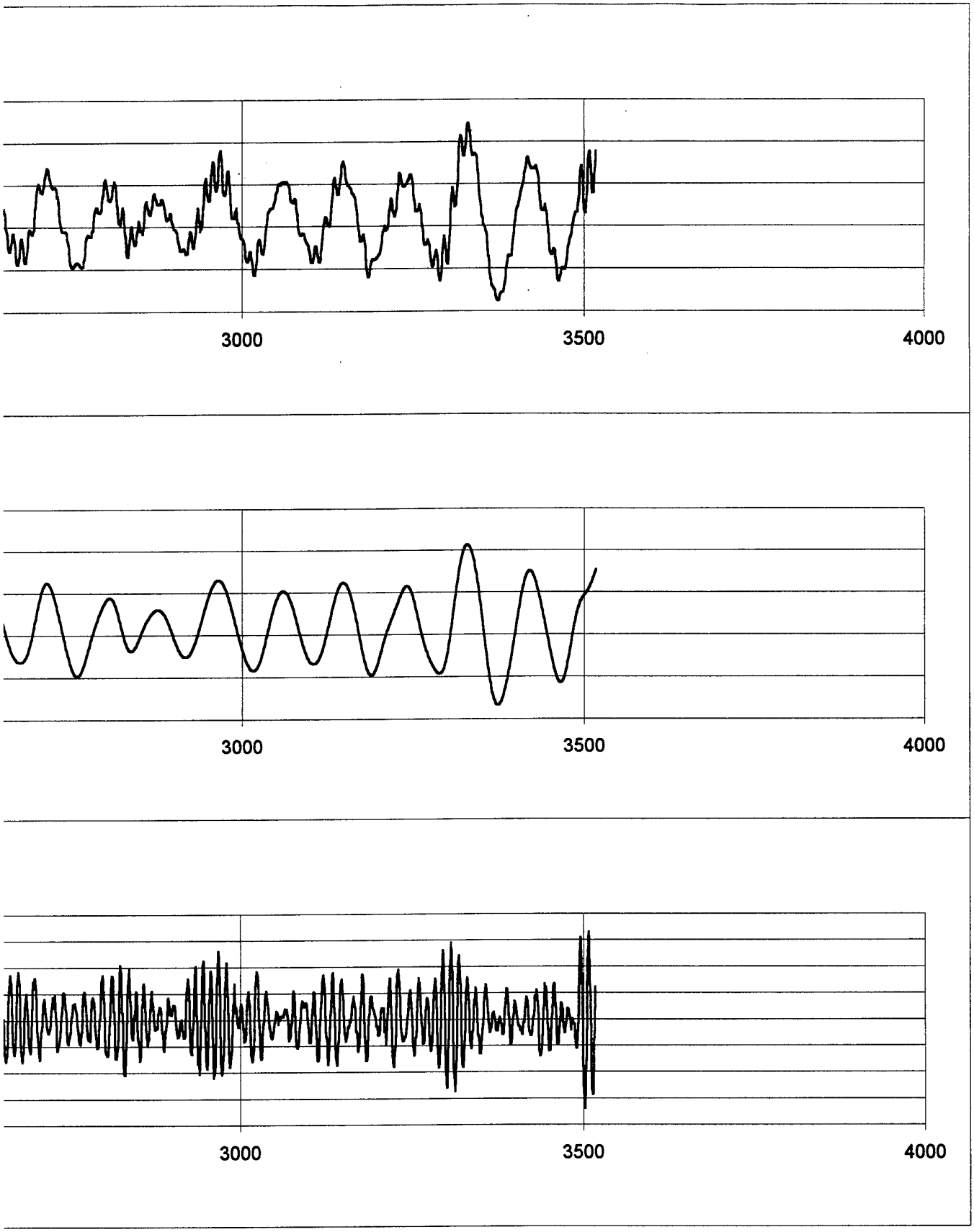

## Filtered Low Frequency Time History



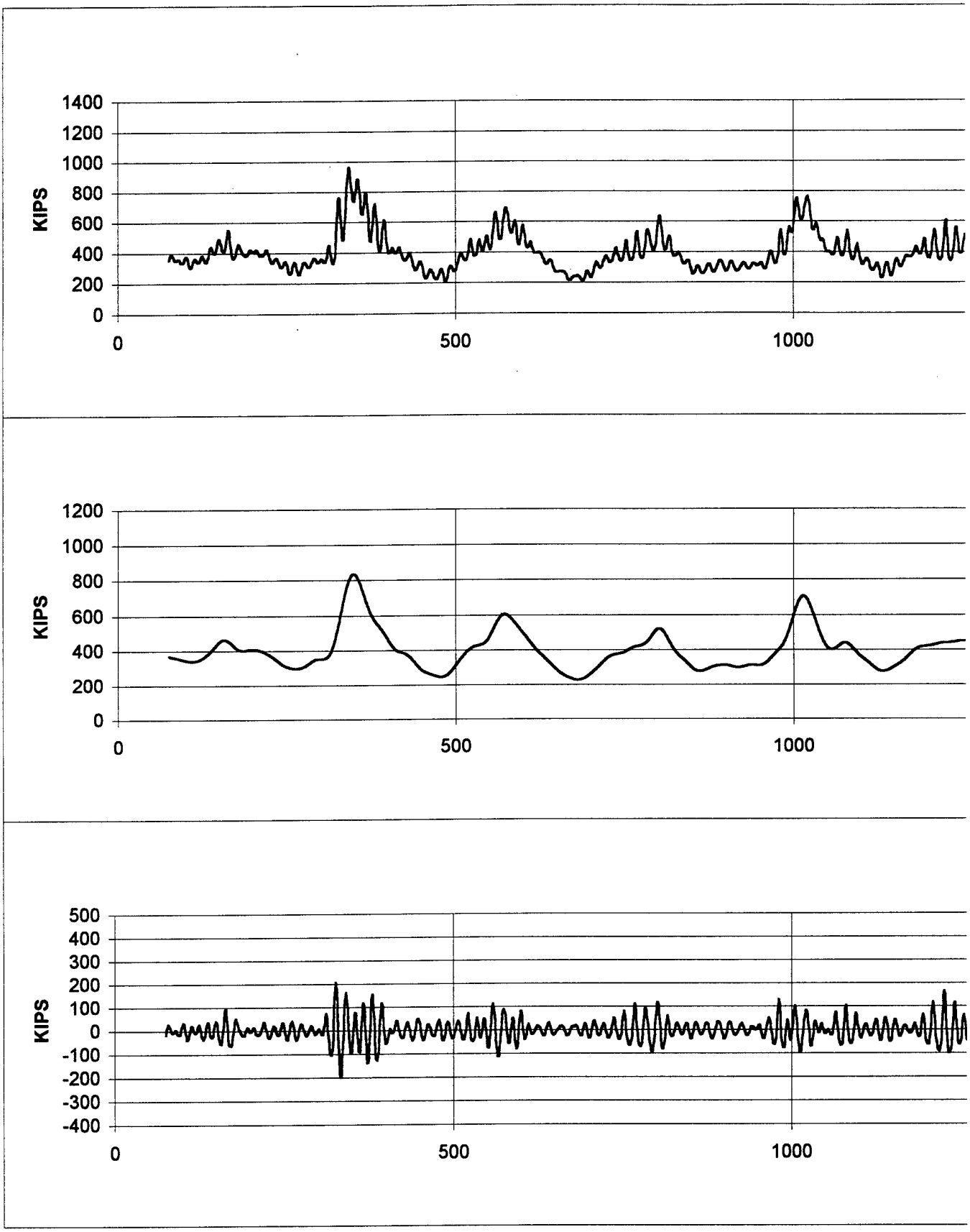

## Filtered High Frequency Time History



TEST A608 - PT HEAVE

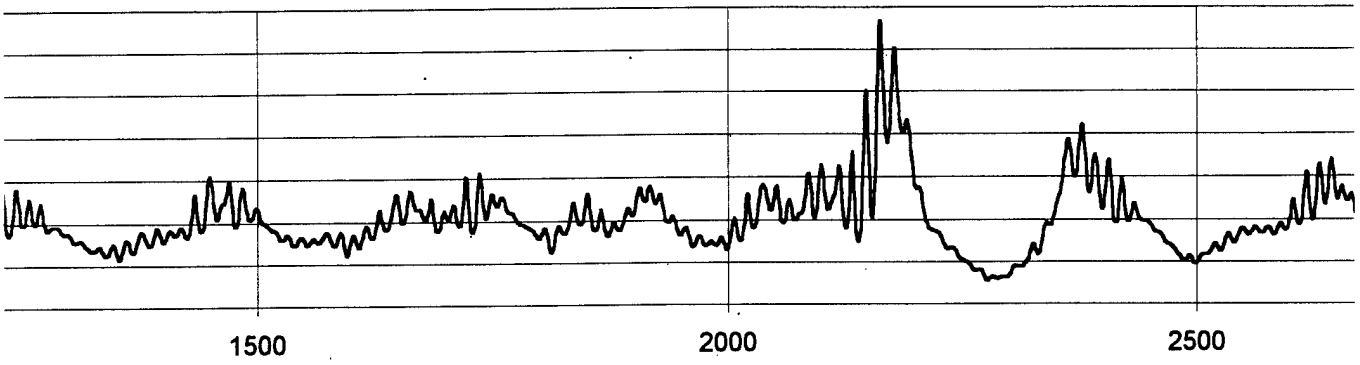


TEST A609 - ML_1 TENSION

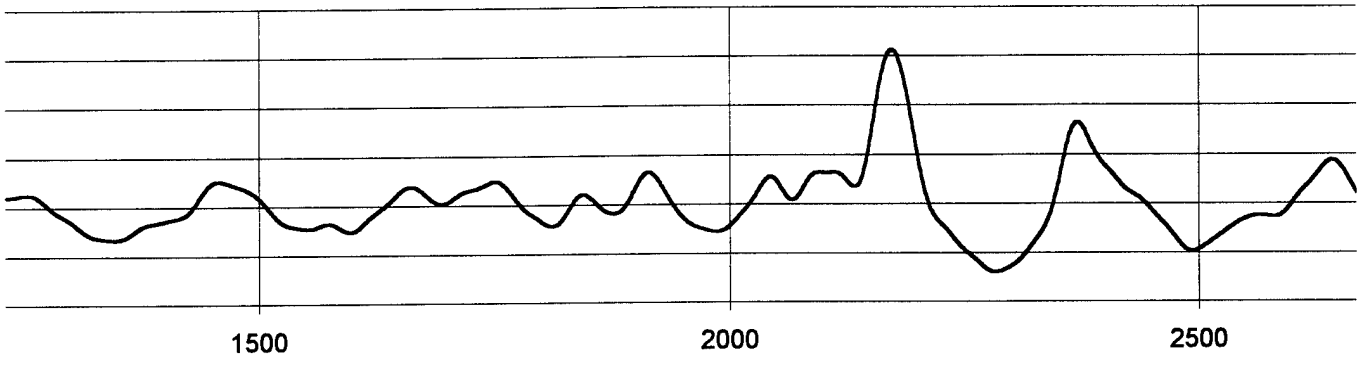


TEST A609 - ML_1 TENSION

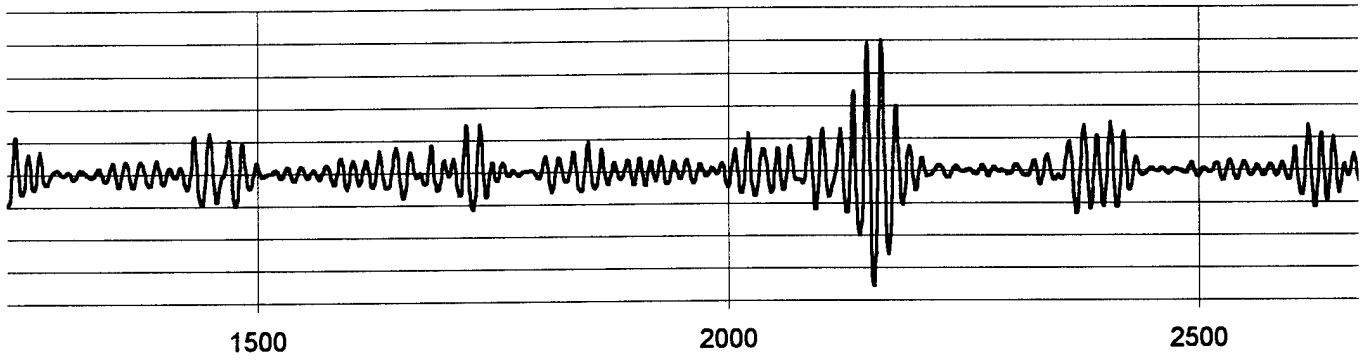
## Unfiltered Time History



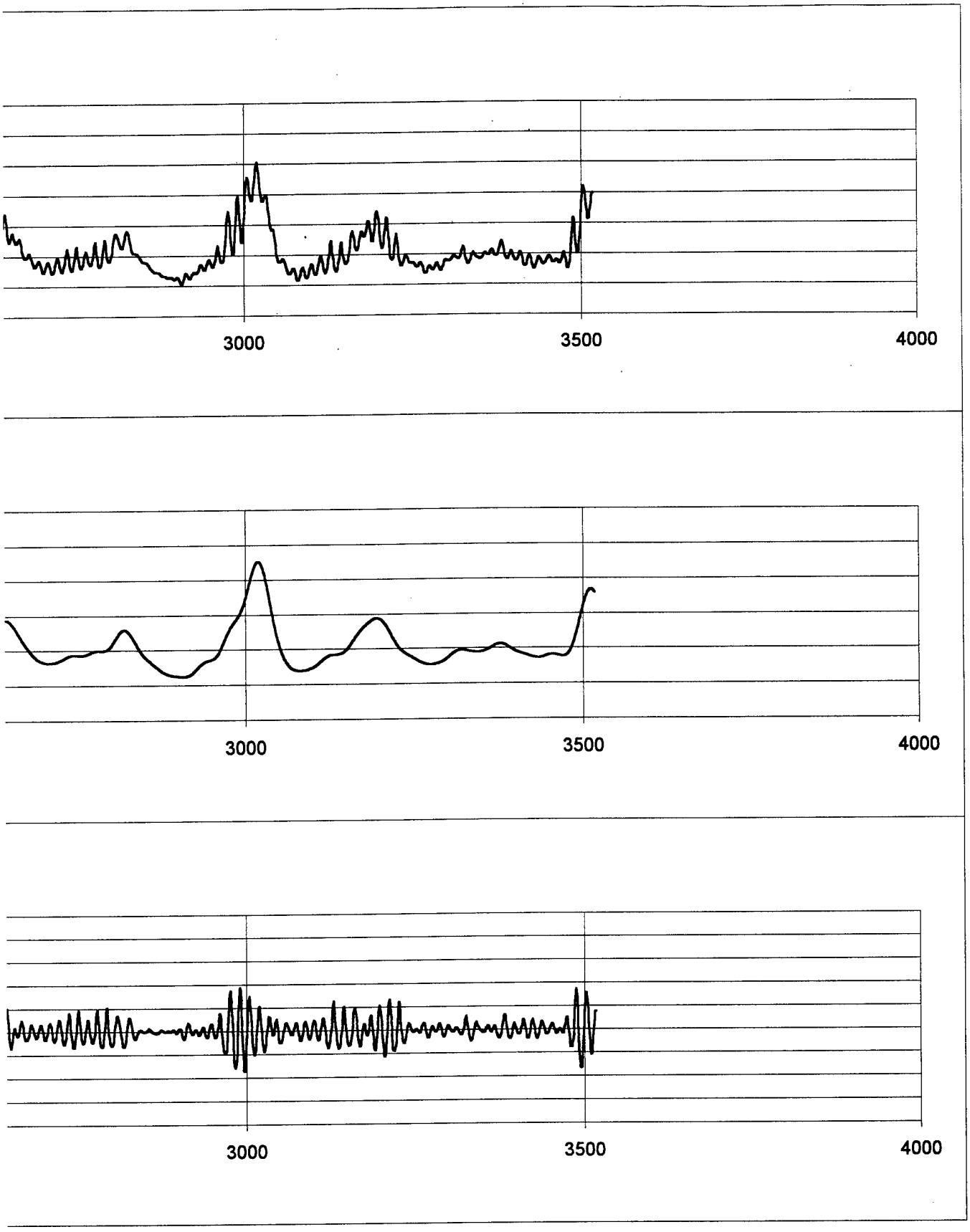

## Filtered Low Frequency Time History



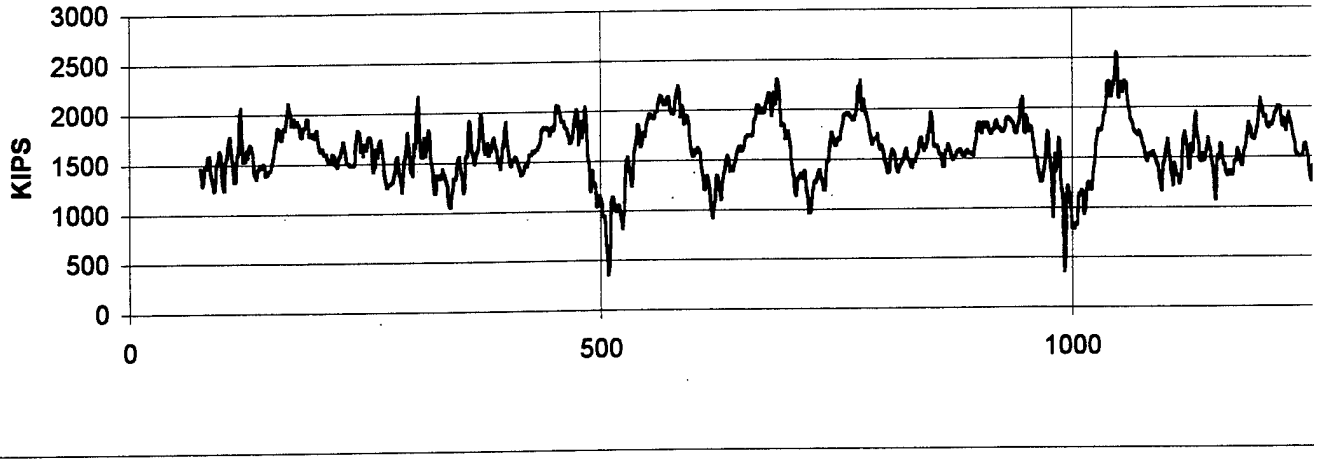

## Filtered High Frequency Time History

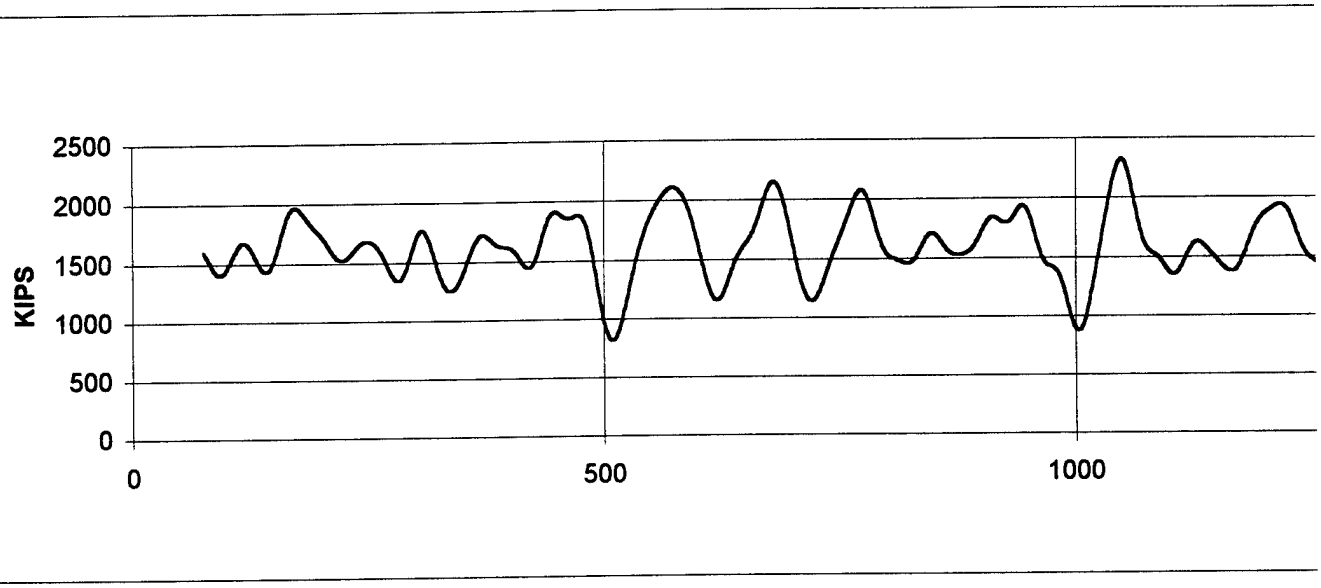


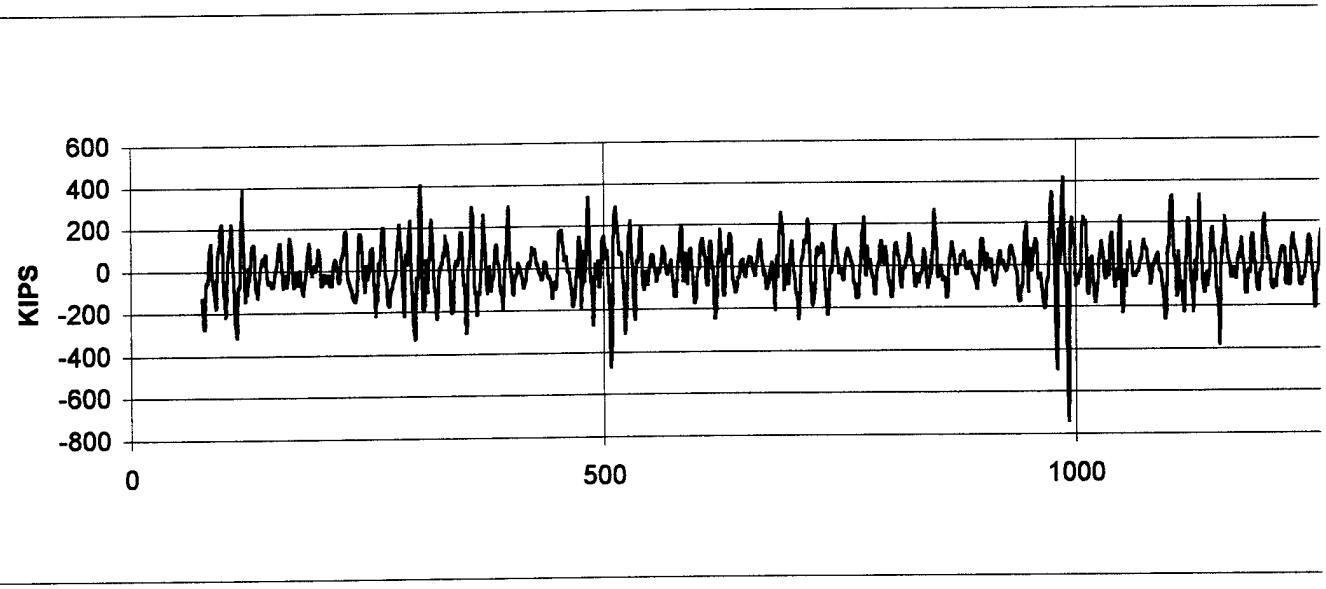
TEST A609 - ML_1 TENSION



TEST A609 - BUOY 1 TENSION

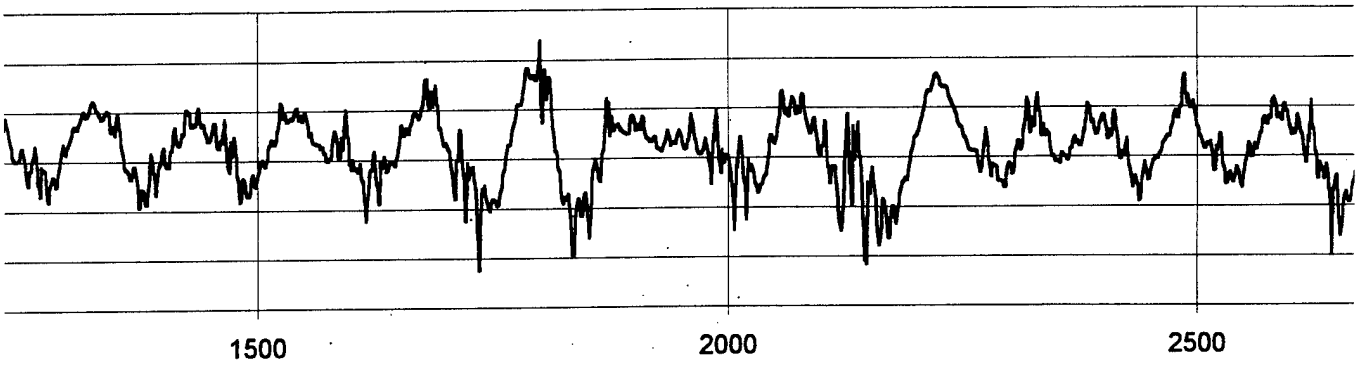


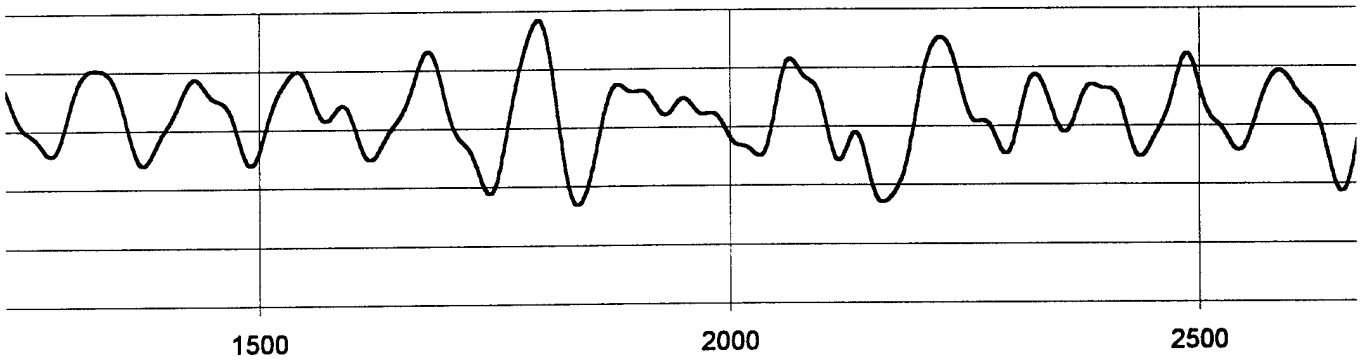



TEST A609 - BUOY 1 TENSION

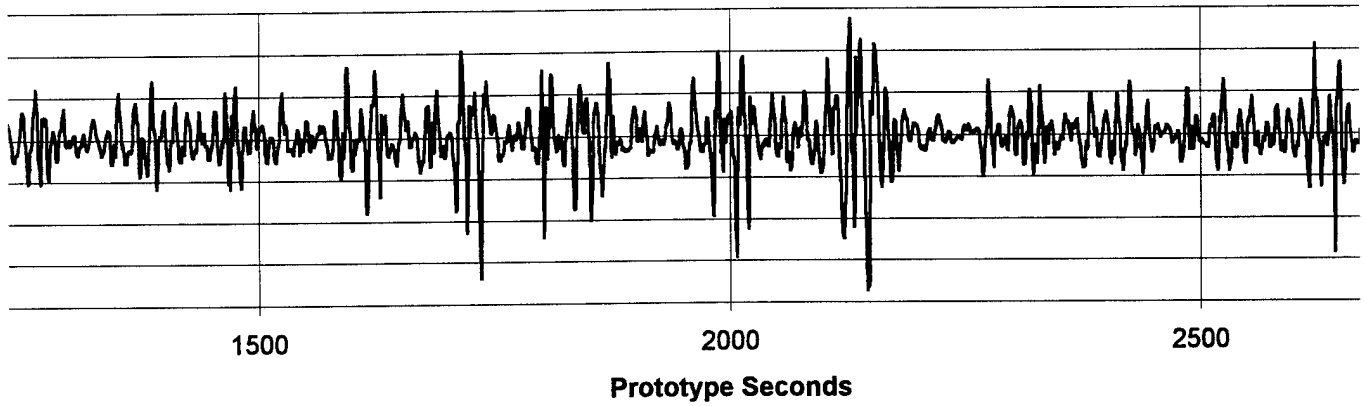
## Unfiltered Time History



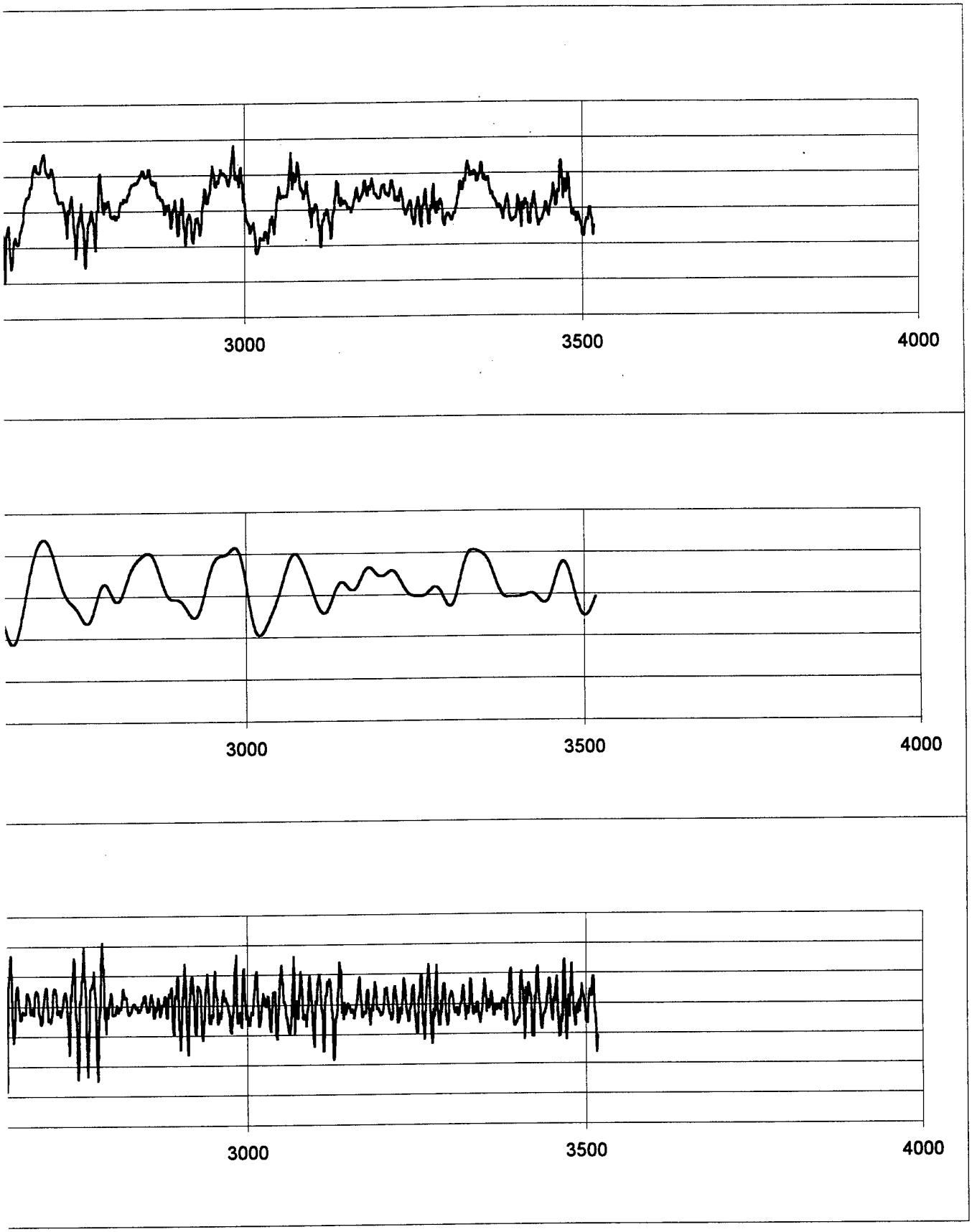

## Filtered Low Frequency Time History



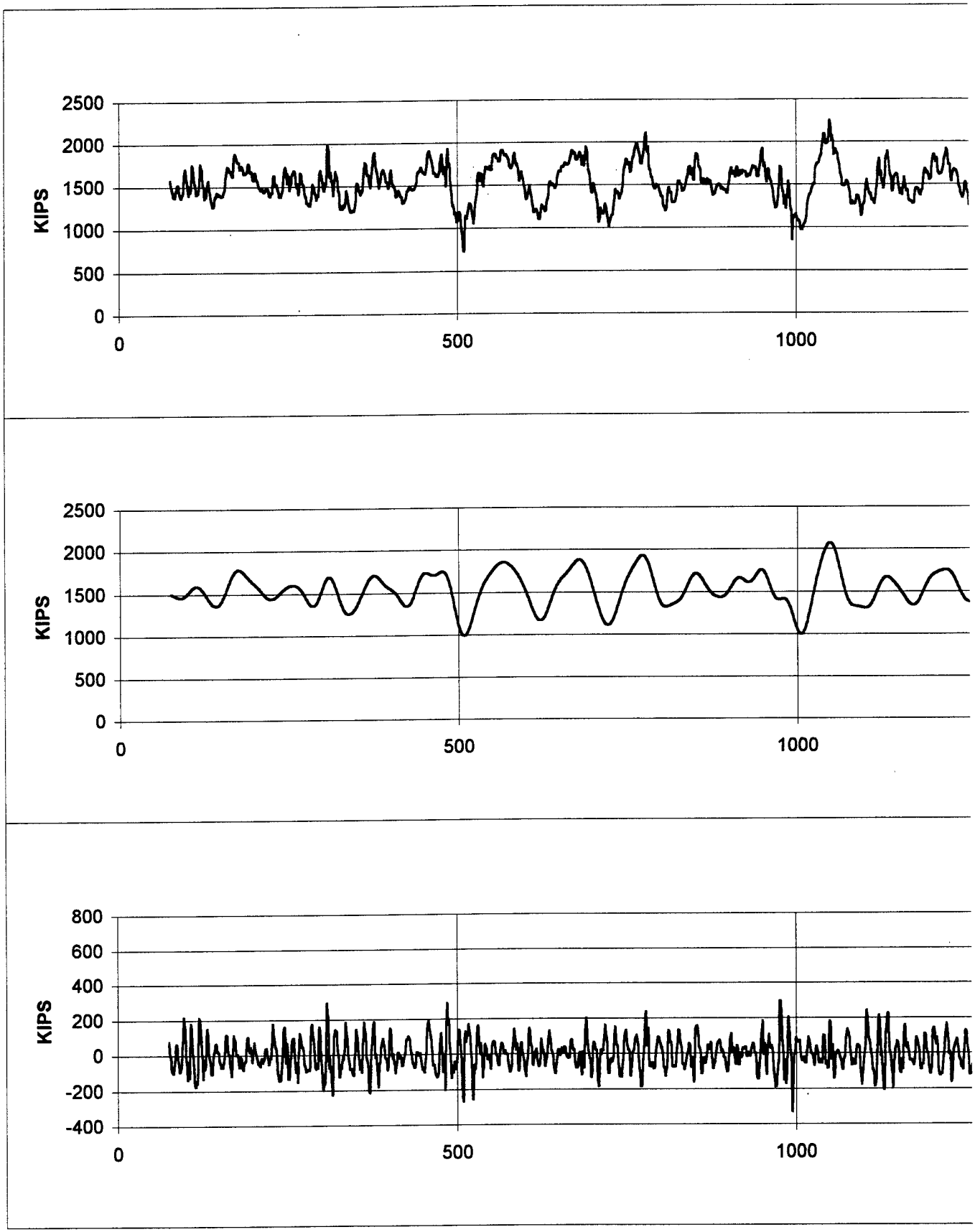

## Filtered High Frequency Time History



TEST A609 - BUOY 1 TENSION

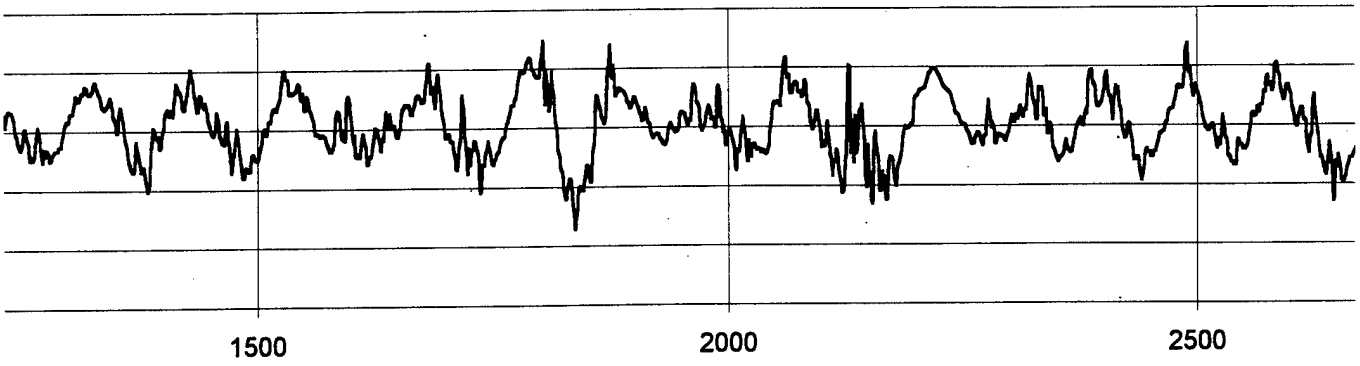


TEST A609 - BUOY 2 TENSION

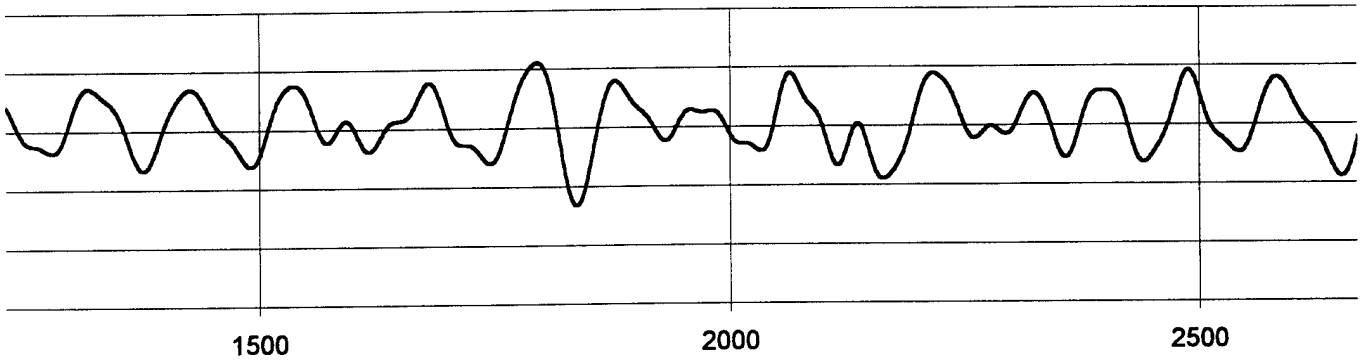


TEST A609 - BUOY 2 TENSION

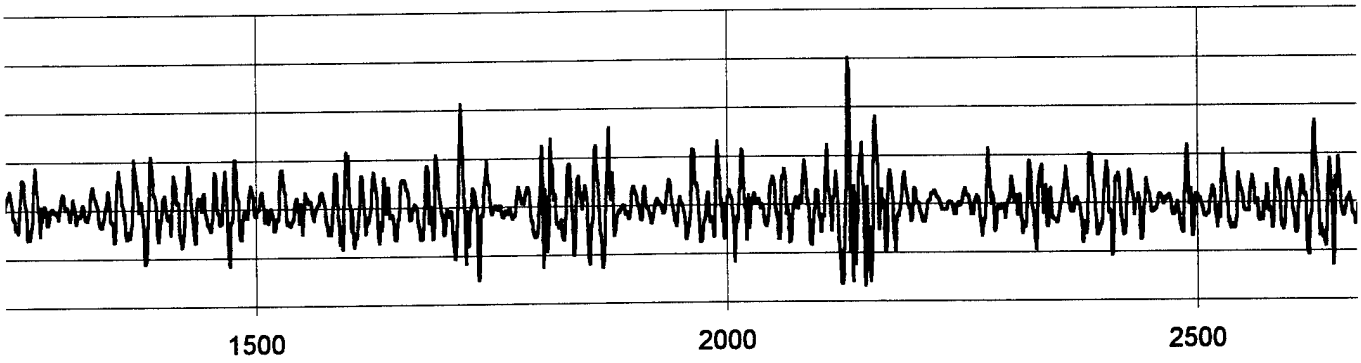
## Unfiltered Time History



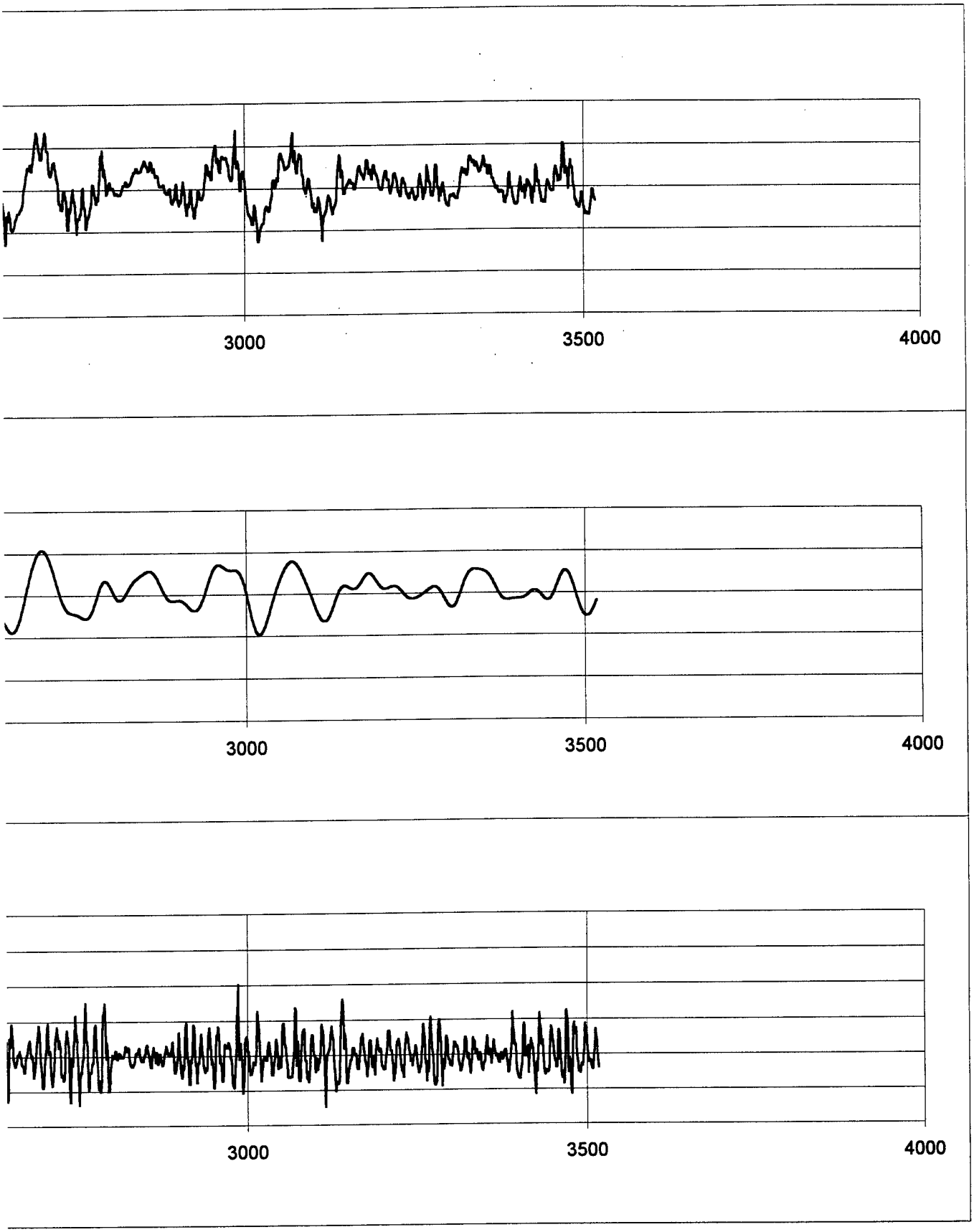

## Filtered Low Frequency Time History



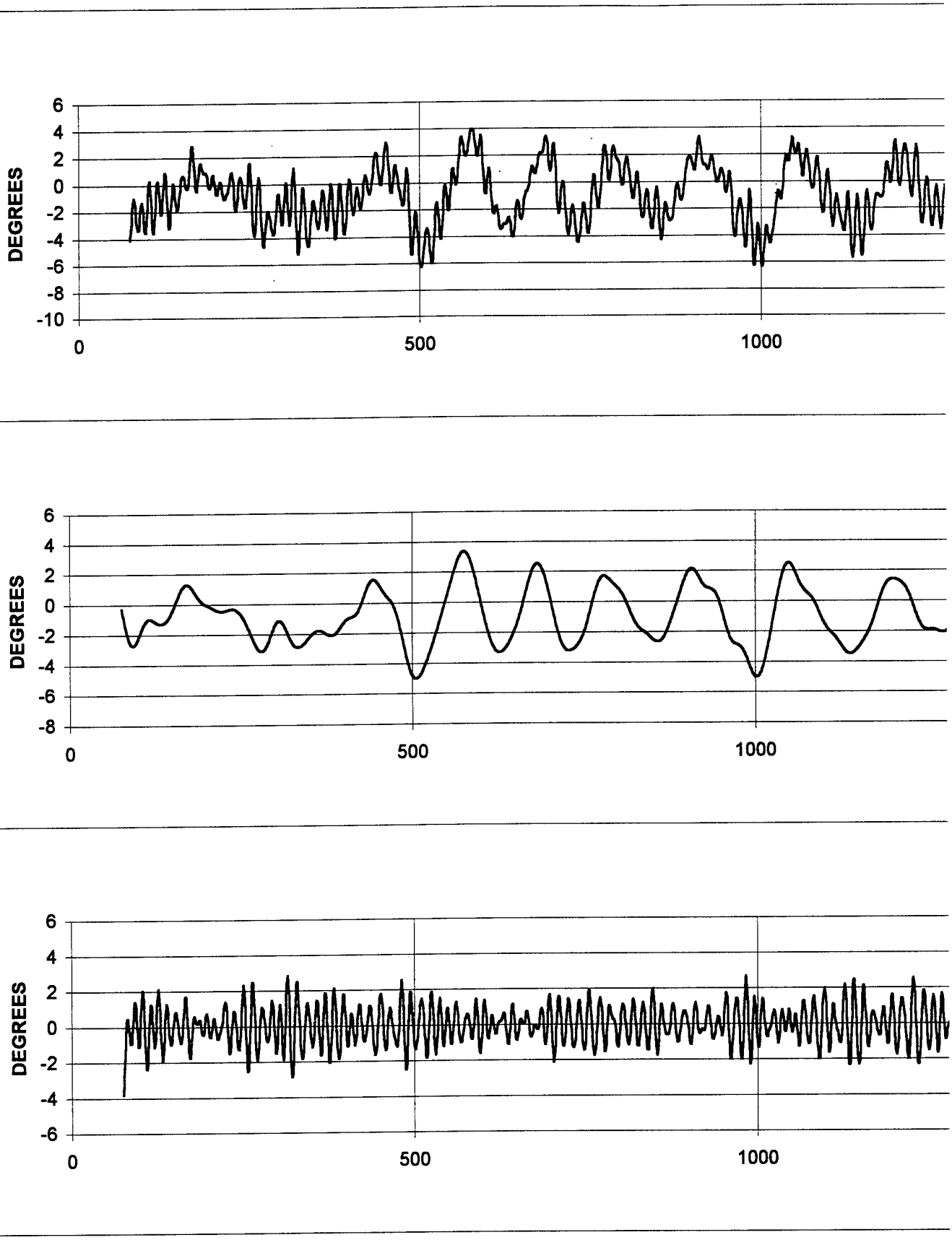

## Filtered High Frequency Time History



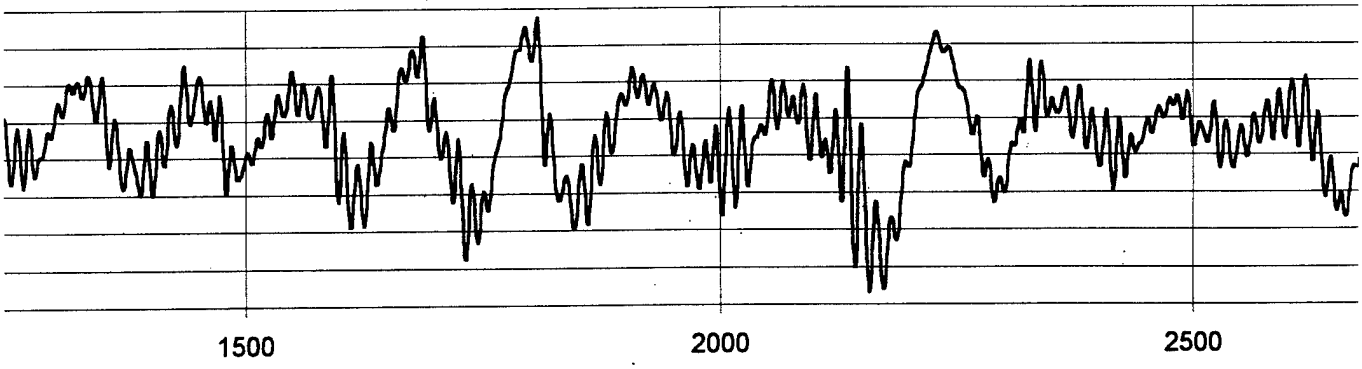
TEST A609 - BUOY 2 TENSION



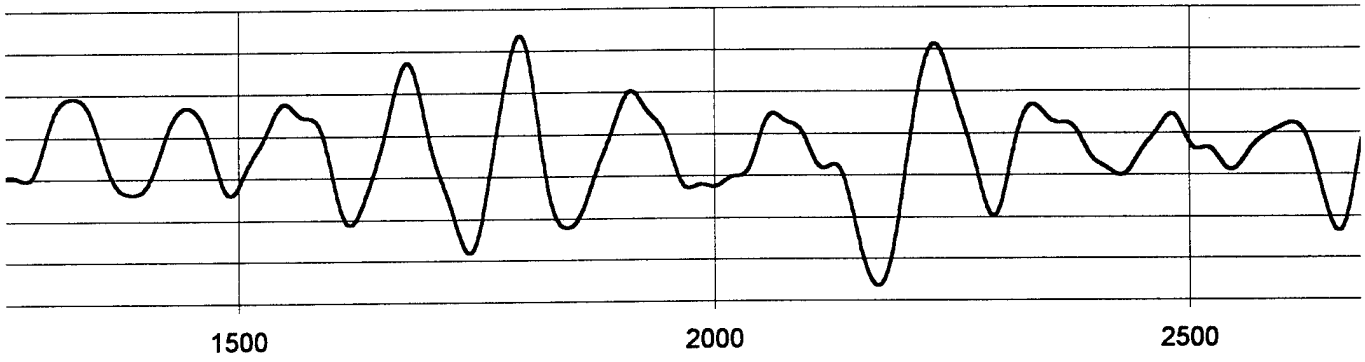
TEST A609 - PITCH



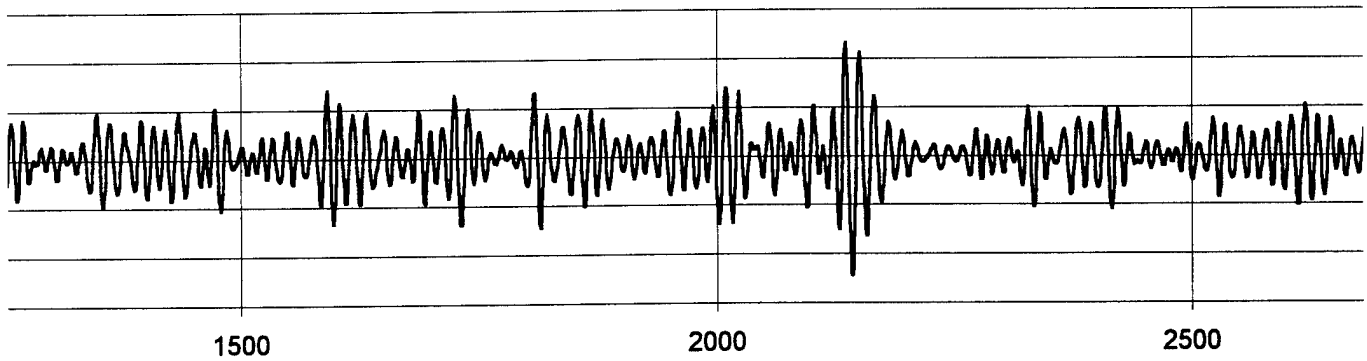
## Unfiltered Time History



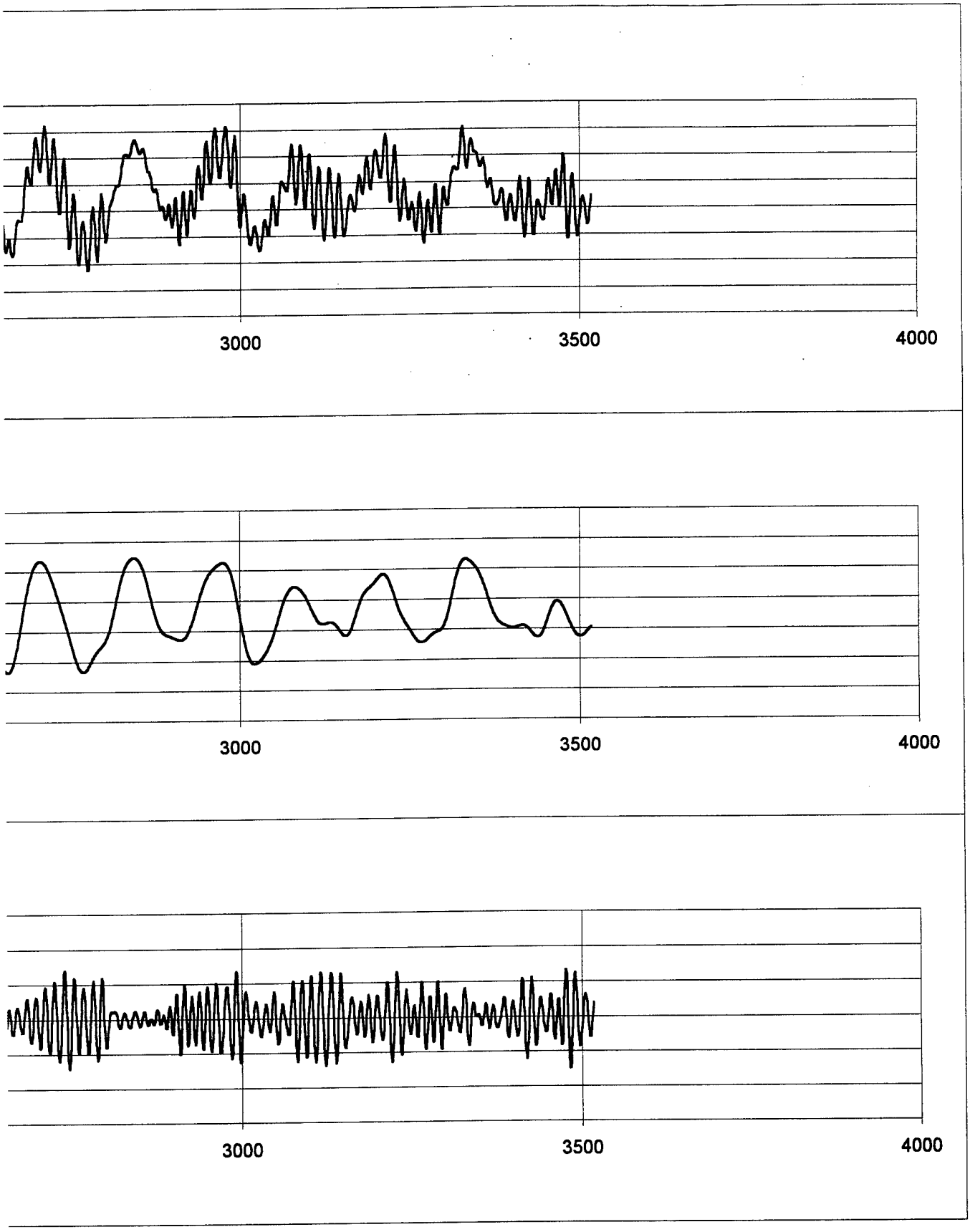

## Filtered Low Frequency Time History



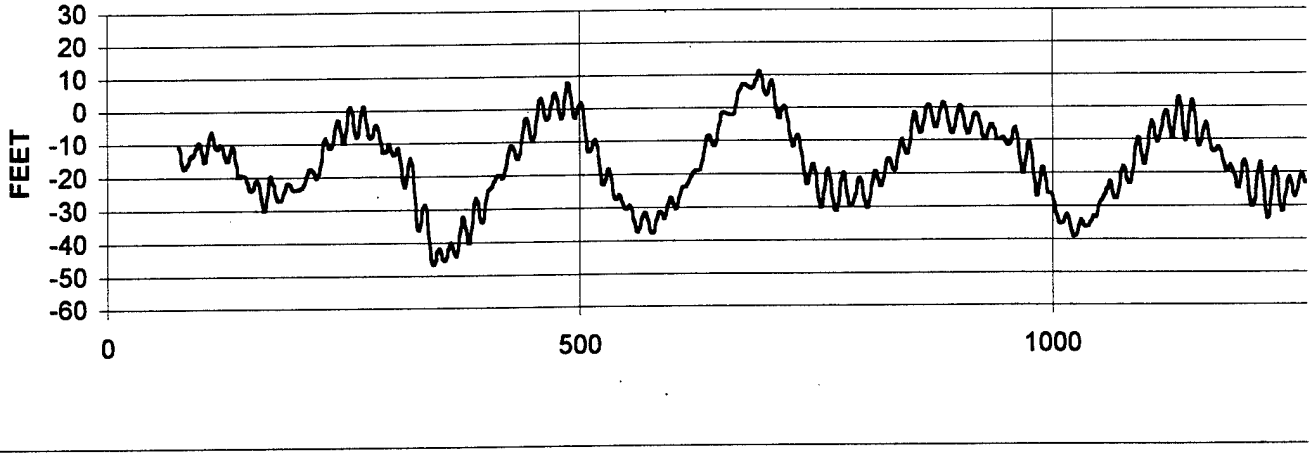

## Filtered High Frequency Time History

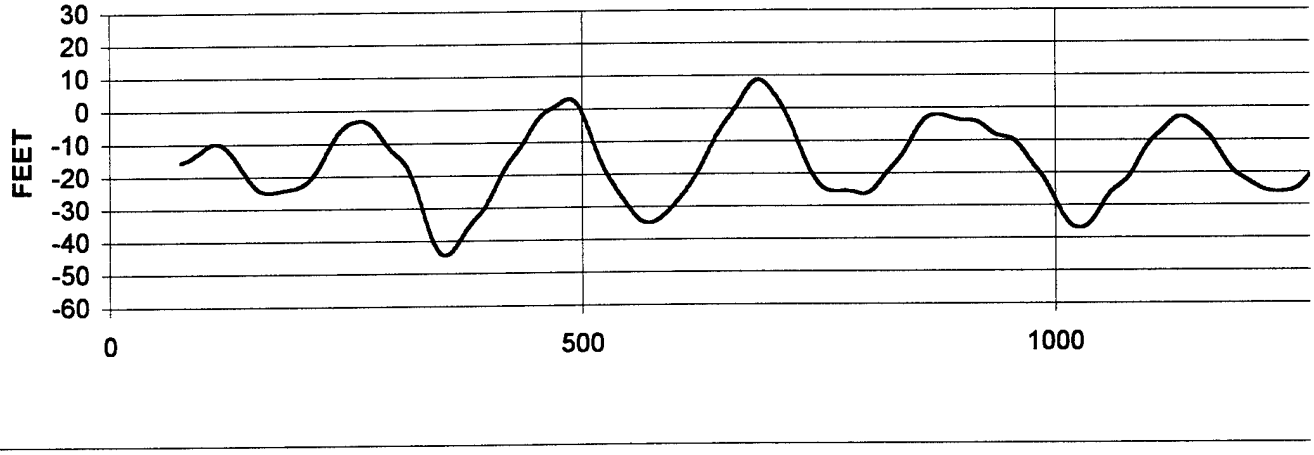


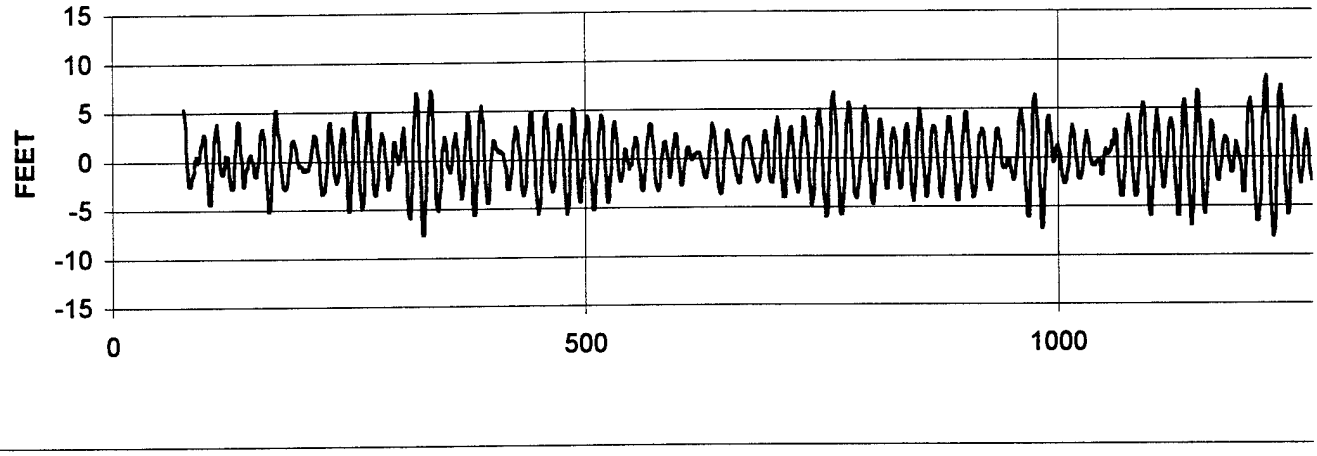
TEST A609 - PITCH



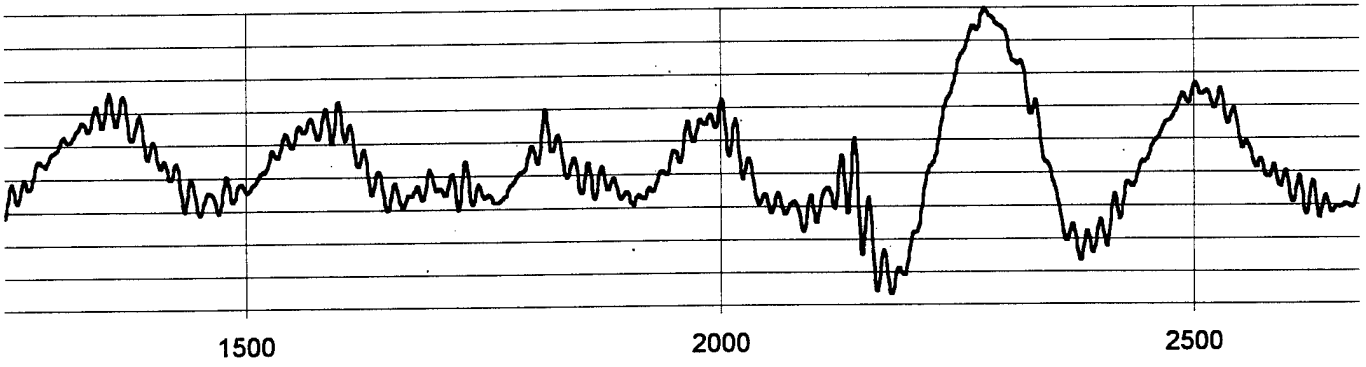
TEST A609 - PT SURGE



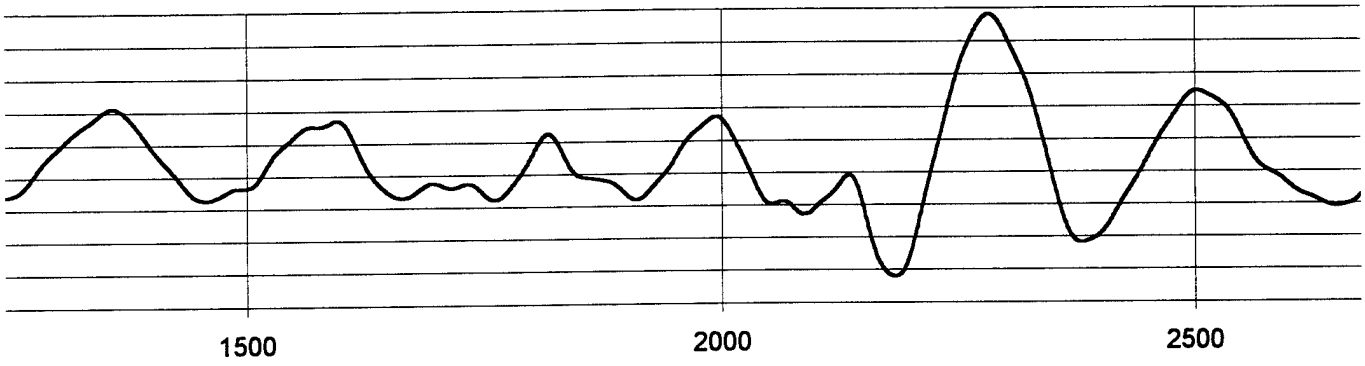



## Unfiltered Time History



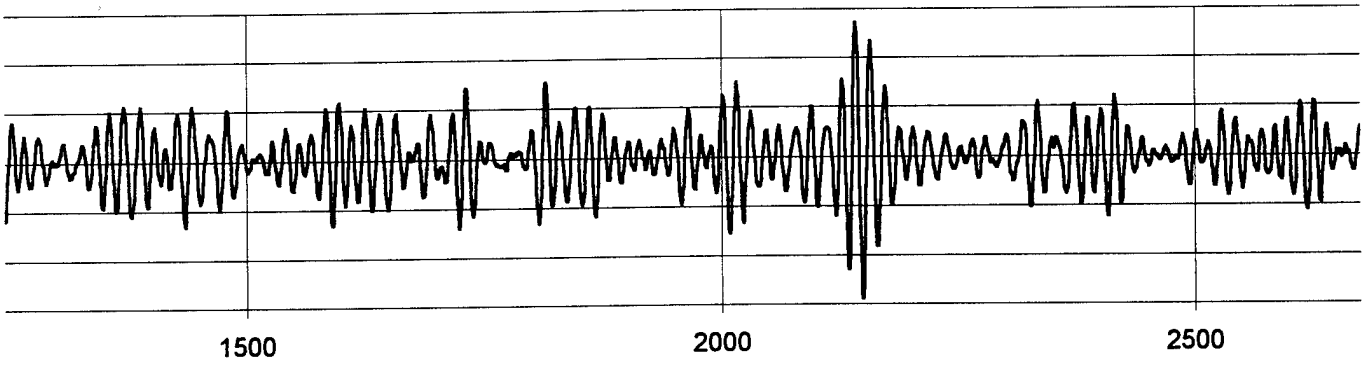

**Prototype Seconds**

## Filtered Low Frequency Time History



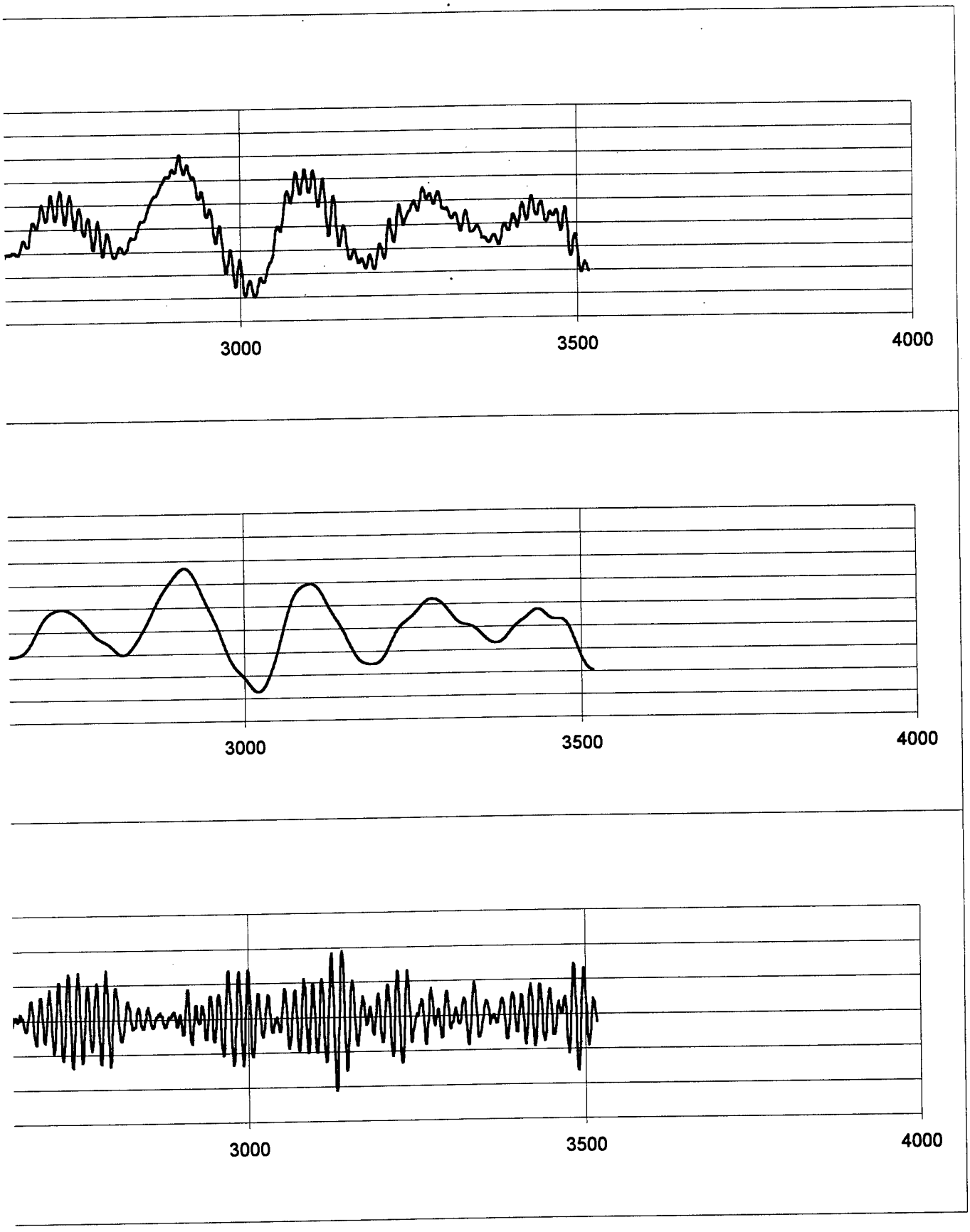

**Prototype Seconds**

## Filtered High Frequency Time History

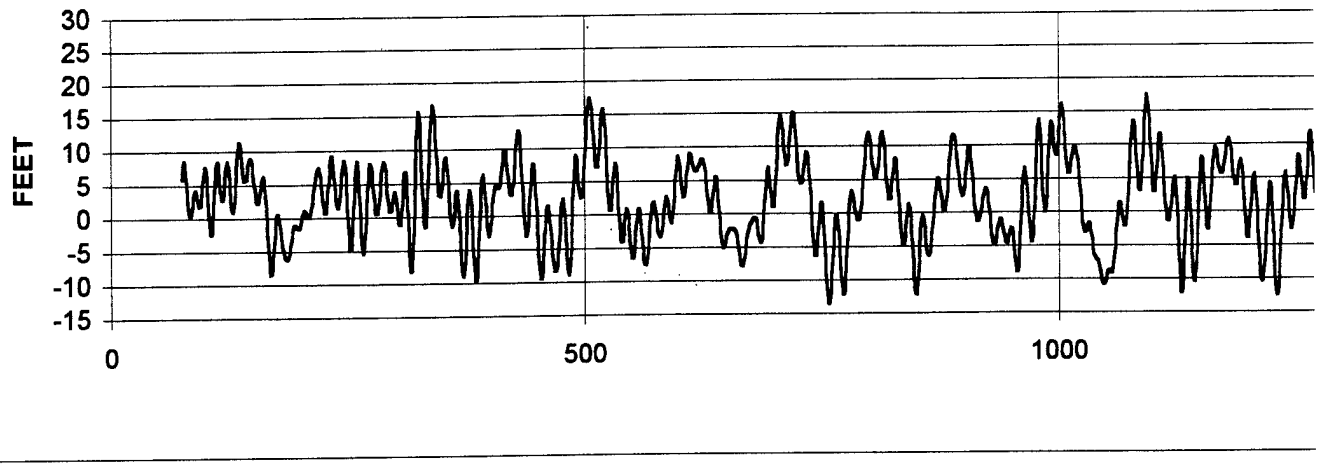


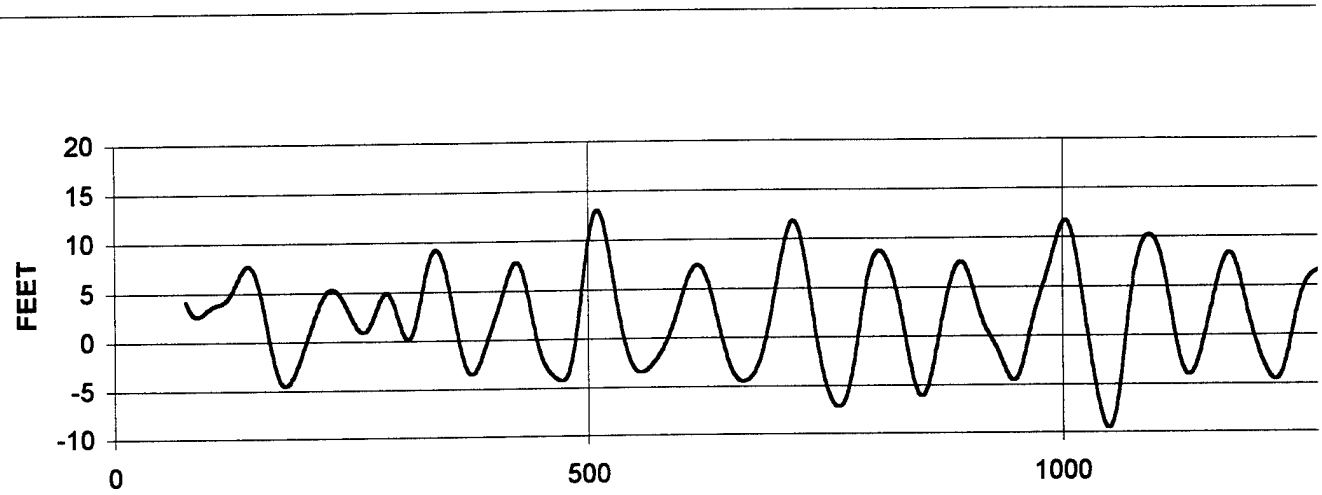

**Prototype Seconds**

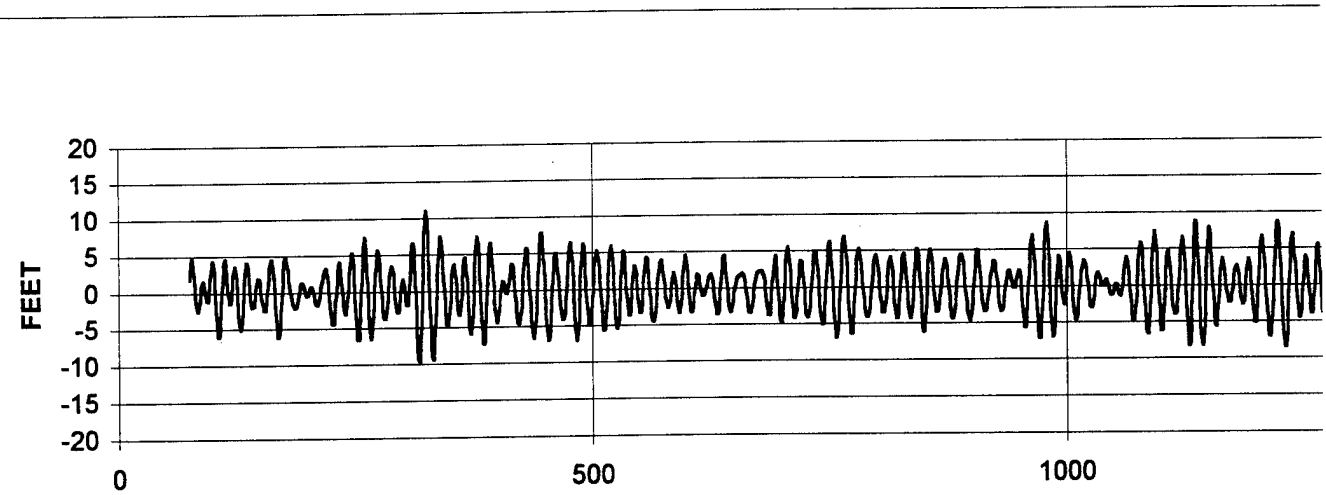
TEST A609 - PT SURGE



TEST A609 - PT HEAVE

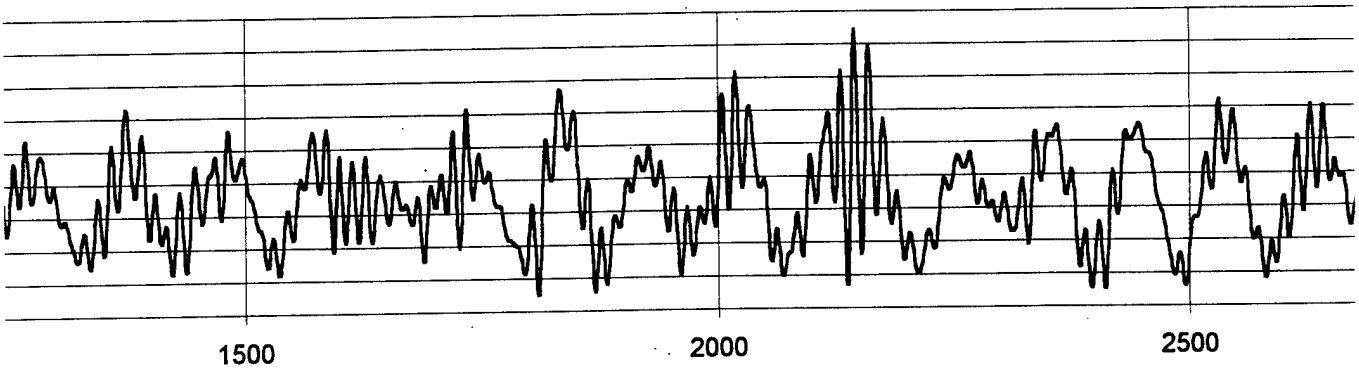


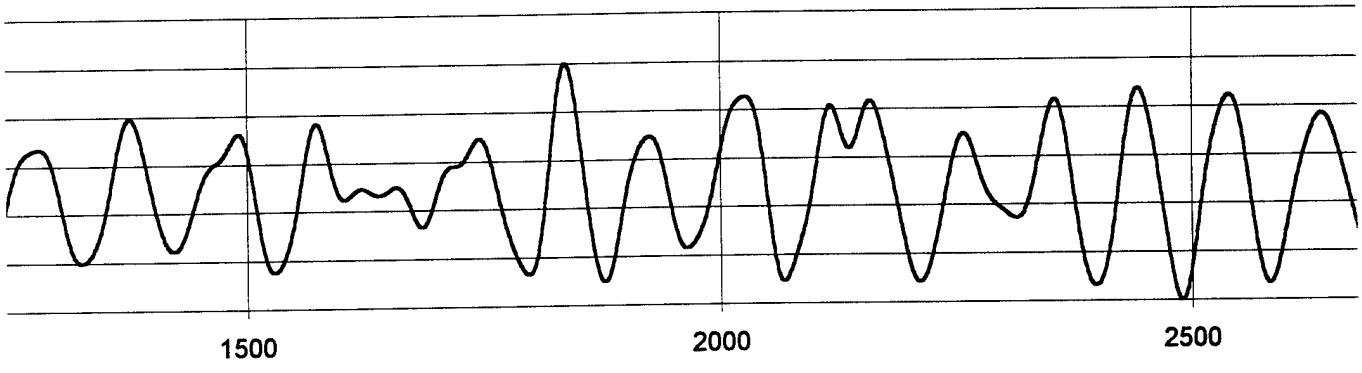



TEST A609 - PT HEAVE

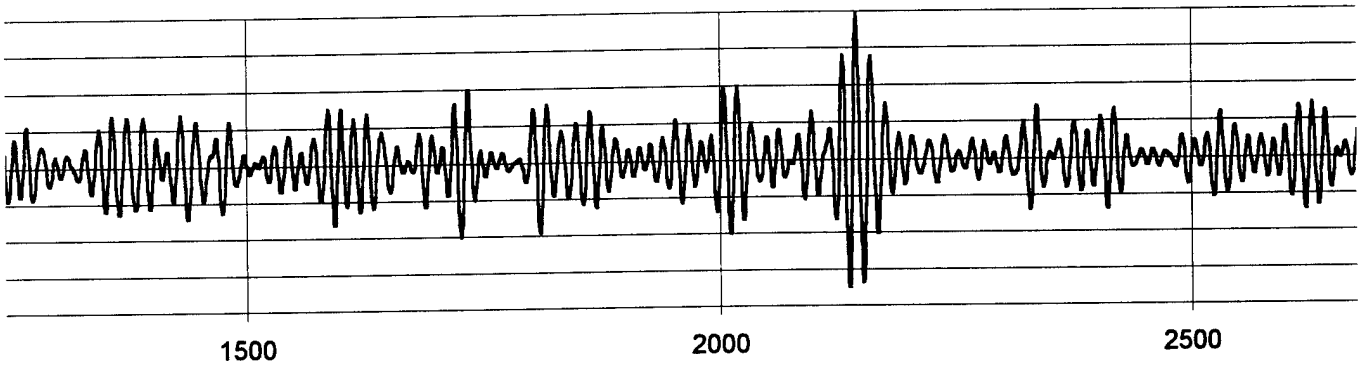
## Unfiltered Time History




## Filtered Low Frequency Time History




## Filtered High Frequency Time History



TEST A609 - PT HEAVE

